

Web services potential? Technology promises a lot, but experts warn users to keep expectations in check. **PAGE 8.**

Quality over quantity Bandwidth is getting cheaper, but quality of service might be a better long-term solution. **PAGE 24.**

NetworkWorld

The leader in network knowledge ■ www.nwfusion.com

April 8, 2002 ■ Volume 19, Number 14

VPN: Hold the firewall

Check Point sees package removing obstacle, cutting costs.

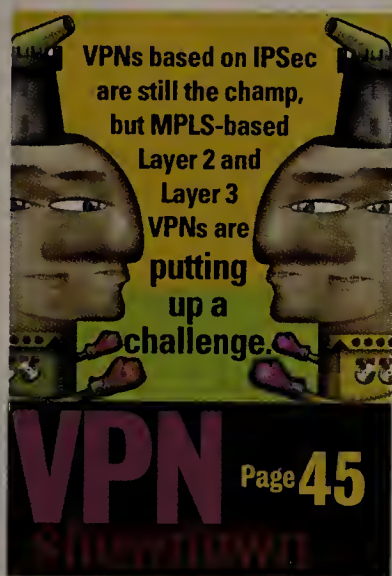
■ BY TIM GREENE

REDWOOD CITY, CALIF. — Check Point Software will introduce this week a stripped-down version of its popular virtual private network software in an effort to get users to make the leap to VPNs even if they have firewalls from other vendors.

According to Check Point, users are reluctant to try VPNs because the gear often comes bundled with firewalls, and customers don't want to pay for something they already have. So rather than a fully configurable firewall, Check Point's new VPN-1 Net combines VPN functions with four basic stateful-inspection firewall options: allow all traffic; allow all encrypted traffic; allow only encrypted traffic; and block all traffic.

To further entice users, Check Point is introducing a new pricing scheme to make it easier to directly compare the cost of frame relay with VPNs. The latter can cost \$300 to \$1,600 less per site per month vs. frame relay. "[Check Point] is encouraging users to extend their networks to sites where they can't justify a frame relay connection today," says Rosemary Cochran, an analyst for Vertical Systems Group.

With VPN-1 Net, Check Point



charges a one-time fee for a VPN-1 software license that covers a certain number of VPN tunnels per site. For example, a license for five tunnels costs \$1,000, so setting up a link between two sites would cost \$2,000. Check Point centralized management software to control the environment costs another \$15,000. The access link would be an Internet connection that a company has in place and is paying for anyway.

By contrast, a single 56K bit/sec frame relay connection costs \$300 to \$500 per month and a

See Check Point, page 12

WISHLIST

Seven things users want from Verizon

"When it comes to the last mile, Verizon is the Big Kahuna. I'd just like to see them recognize that there is some competition in the marketplace."

Paul Ladd, director of MIS, Suffolk University

■ BY MICHAEL MARTIN

Verizon CEO Ivan Seidenberg has focused on expansion since 1996, when as CEO of Nynex he hammered out a merger with Bell

Atlantic. His latest expansion plan is to continue winning long-distance approval in states where Verizon is the incumbent local provider. But before Seidenberg and Verizon set their sights on becoming a national player in the U.S. long-distance market, users polled by *Network World* say there are plenty of things on the local side that Verizon needs to do.

1. Come up with a better trouble-ticket process.

"We constantly have problems
See Verizon, page 16

Vendors up the volume on VoIP

■ BY PHIL HOCHMUTH

SEATTLE — This week's Voice on the Net show will feature new wares that help customers mix legacy phone gear with an IP PBX, add multimedia communications to call centers and better integrate the latest voice-over-IP technologies with existing network and security infrastructures.

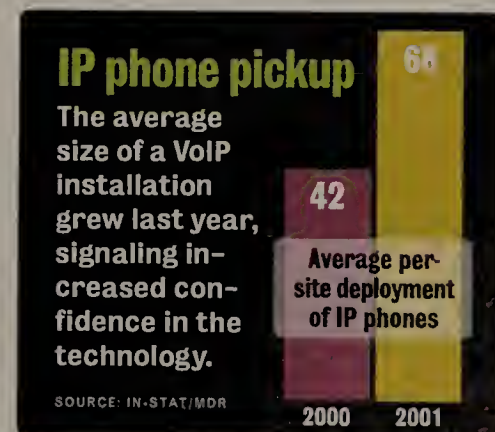
The heightened vendor activity comes as customer appetites for large-scale IP telephony are growing, experts say.

"Last year, we saw a lot of clients doing tiny proof-of-concept types of implementations in places where they could ring a fence around the VoIP activity in a particular area and not worry about it degrading the network," says Rick Hughes, an IT consultant with PricewaterhouseCoopers. "Over the last three months, client activity has moved toward full-blown implementations."

That movement will be seen front-and-center at VON.

Citel, a U.K. maker of VoIP gateways, will show off its Citelink Handset Gateway card, which will let digital PBX phones tie into a 3Com NBX IP PBX system.

Scheduled to be released in June, the module will fit into an available 3Com NBX 100 chassis and let 16 digital phone ports access the NBX system (for about \$125 per digital phone). The de-



vice will support Nortel digital handsets in its first release; later releases are planned to support other vendors' digital phones, the company says. Other vendors that mix digital phones with VoIP include MCK Communications and Shoreline Communications.

Most common features of the NBX, such as call transfer, hold, speed dial and voice mail retrieval, will be available on digital phones attached to the system. The product is targeted at businesses interested in buying an IP-based phone system, but unwilling to roll out IP phones to

See VON, page 68



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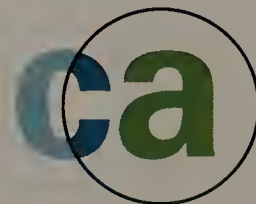
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Review

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Forums

Licensing woes

Major vendors are changing the rules on licensing, forcing upgrades and costing you more. Share your thoughts.

DocFinder: 8837

Got interference?

A new Agere Orinoco access point will include features that combat interference from microwaves and 2.4-GHz phones. Could this be an admission that 802.11b is unfit for the home? Share your solutions.

DocFinder: 8838

Interactive

Call for entries

Know someone who has had an outstanding career, has led an innovative program or is a rising star? Enter them into the Network Professional Association's inaugural Awards for Professionalism program. Deadline is Monday, April 15.

DocFinder: 8839

Wireless LAN audio primer

Wireless LANs can make it easy to support a roving workforce, but pitfalls abound. In this 8-minute primer, we take a look at how wireless LANs are set up, the challenges involved and the varied specifications underlying the technology. **DocFinder: 8840**

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Columnists

Compendium

XML tools

Fusion Executive Editor Adam Gaffin digs up a list of all sorts of tools for working with XML data and files.

DocFinder: 8841

Help Desk

Implementing a directory service

Columnist Ron Nutter offers a reader advice on risks and issues associated with implementing a directory service.

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Are you really sick?

Columnist Jeff Zbar has advice for managers on how to handle the use of sick days for teleworkers.

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Wireless ready?

Is your network ready for wireless? Find out with our free Tech Update "Integrating and managing wireless in your network" event. **DocFinder: 8546**

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News Bits

NetWare vulnerability flagged

■ IT managers of NetWare 5.1 and 6 networks should be aware of a vulnerability to the operating system that makes it subject to intrusions that could cause the system to crash. IX-Security.com, an IT security firm, reported last week that NetWare 5.1 and 6 are vulnerable to a buffer overflow condition that could affect server operation. Both operating systems can be attacked through the NetWare 6 Remote Manager utility, also called the Portal NLM (NetWare Loadable Module), a Web-based server management interface. With scripts or just the correct combination of keystrokes, intruders could cause the servers to crash, abend or execute code against the server. Novell was expected to issue a patch that could be downloaded at <http://support.novell.com/misc/patlst.htm>.

Instant messaging twist

■ Users of Web portals, shared-interest sites, auction sites and corporate applications could see which participants are logged on to AOL's Instant Messenger, and contact them, as a result of a deal between AOL and PresenceWorks. As instant messaging becomes more widespread, visitors to Web sites want to be able to contact a fellow visitor immediately, according to Matt Smith, CEO of PresenceWorks.

For example, a shopper on an auction site might want to converse in real time with a seller, he says. At Web sites that use PresenceWorks' software to provide a link to AIM, any current AIM user will be able to find out if another such user is available and then click on a button to start chatting. The AIM software must be installed and running on each user's machine.

Financial woes mount at Qwest

■ Qwest Communications paid \$44 billion for US West in 1999, but the weakness of the telecommunications market and a new accounting rule are forcing Qwest to take a write-down of \$20 billion to \$30 billion for the value of the assets acquired, the company said last week. Qwest also announced it would have to amend downward by \$48 million the company's previously announced fourth-quarter 2001 revenue figure.

Microsoft's Belluzzo stepping down

■ Rick Belluzzo, Microsoft's COO and a key force behind the growth of its .Net, Xbox and MSN efforts, is leaving the company. Belluzzo, 48, will step down as president and COO on May 1 and leave the company in September. No specific reason was offered for his departure. The move came as part of a broader reorganization intended to give greater autonomy to the executives in charge of Microsoft's various product groups, the Redmond, Wash., company says. As part of the changes, Microsoft will be divided into seven business units: Windows Client, Knowledge Worker, Server and Tools, Business Solutions, CE/Mobility, MSN, and Home and Entertainment. Belluzzo, former CEO of Silicon Graphics,

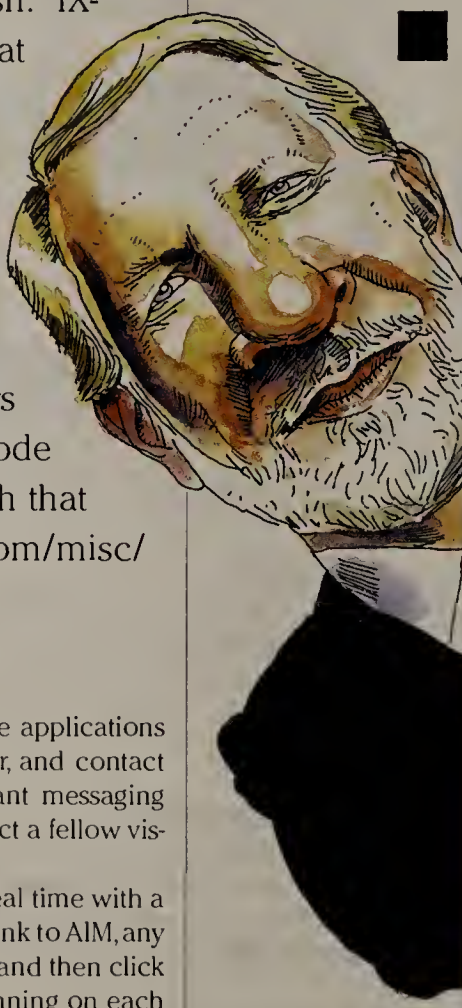
joined Microsoft in September 1999 as group vice president of its consumer group.

Microsoft patches new holes in NT, 2000

■ Microsoft last week announced two new moderate-risk security holes that affect Windows NT/2000 and offered patches to fix both. The more serious of the two affects most versions of Win 2000 and NT, and could let an attacker elevate privileges or run code on a local machine. The vulnerability affects the Multiple Uniform Naming Convention Provider service on these systems, which helps them identify the location of network resources. The second vulnerability affects Win 2000 Server products and can let an attacker block the application of Group Policy.

FileNet to acquire eGrail

■ FileNet last week said it is spending \$10 million to acquire eGrail in a move intended to add to its product portfolio a document management system that can compete against those from rival vendors such as Interwoven and Documentum. FileNet gains eGrail's Enterprise Content Server technology and "substantially all" of its staff, including a 40-person development team. FileNet plans to integrate the eGrail Enterprise Content Server into its flagship Panagon line of content infrastructure management software and its newly created Brightspire portfolio of commerce tools. The company also will continue selling eGrail's software as a stand-alone tool.



The Good The Bad The Ugly



Who needs the Oscars? The Network Professional Association, with assistance from *Network World*, will present its Awards for Professionalism at NetWorld+Interop in Las Vegas in May. Awards include lifetime achievements, best "rookie" and most innovative network implementation. Visit www.npa.org for more information and to nominate candidates.



WorldCom of hurt. WorldCom CEO Bernie Ebbers has been keeping a low profile of late and it's no wonder. After announcing in March that the Securities and Exchange Commission is investigating its accounting practices, WorldCom last week said it is cutting 3,700 employees from its data services division, which adds up to 6% of the company's workforce.



We're not laughing. Bill Gates may or may not be your favorite high-tech baron, but he deserves better than he received last week at the hands of a boorish radio host playing an April Fool's prank. The host impersonated Canadian Prime Minister Jean Chretien to engage Gates in a telephone conversation during which Windows was insulted and that was subsequently played on the air.

FTC trumpets 'Net fraud crackdown

■ The Federal Trade Commission last week announced results from an international law enforcement sweep aimed at squashing deceptive spam and Internet fraud, reporting that 63 cases have been brought against 'Net scams involving matters such as phony cancer cures and e-mail investment schemes in the past six months. The efforts were made by the FTC's Netforce, a group of eight U.S. and Canadian state law enforcement agencies concentrating on tracking down perpetrators of deceptive e-mail and Internet fraud. While some cases involved e-mail pyramid schemes looking to fleece consumers of cash, others were more damaging, such as the case filed against David Walker, who is charged with selling fake cancer cures on his Web site. The FTC has won an injunction against Walker, and his site has been taken down.

More flocking to government Web sites

■ So many American citizens are demanding access to government services online that a Web presence is now necessary for government bodies at all levels in the U.S., according to a study released last week by Pew Internet and American Life Project. According to the study, 68 million American adults have used government-agency Web sites, a 70% increase from 40 million two years ago. Citizens would like to carry out more transactions, be offered more information and have faster access to the Web sites, according to the study.



No reason was given to the press as to why Rick Belluzzo has decided to step down as COO at Microsoft on May 1.

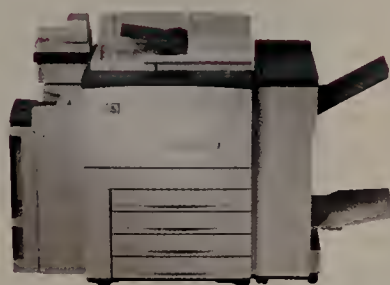
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Web services riddled with problems

■ BY JOHN FONTANA

As the hype surrounding Web services swirls ever faster, industry analysts are switching from explaining what Web services are to spelling out the pitfalls and shortcomings of the technology.

"Web services are by no means an end-all solution to anything," says Bernhard Borges, managing director of the advanced technology group at PricewaterhouseCoopers. "It's not one solution for one problem."

Borges says there is plenty of effort today around building Web services — they will be front and center at Microsoft's annual Tech Ed conference this week in New Orleans — but he says there isn't enough attention being paid to the "mortar around the brick to build the house."

Experts warn that expectations should be kept in check.

"People tend to overestimate the impact of a technology in its first two to three years, and underestimate it about five years out," say Phil Bronner, a principal with Novak Biddle Venture Partners.

IT executives are starting to test Web services internally as an integration technology, but Bronner and others say the grand Web services vision of dynamic discovery and integration of corporate systems and intelligent applications over the Internet is largely hype.

Web services technology is based on a collection of XML-centered protocols such as Simple Object Access Protocol (SOAP) and Web Services Description Language (WSDL). Definitions of Web services range from dynamic XML-based appli-

cations that can be located and executed over the Internet, to simple interfaces for integrating unlike systems.

"Right now there is a set of issues to solve," Bronner says. "The first is security, then you look at quality of service and the completion of a given process between partners."

A recent IDC report says Web services represent a new approach to an old problem: getting systems to talk to one another.

"But the glorified view of the Web services approach is a futuristic model that is a ways out and may never happen," says Rob Hailstone, an IDC analyst.

Borges says even the underpinnings of Web services, such as SOAP and WSDL, raise questions about incompatibilities.

"We've agreed to use electricity,

Web services evolution

IDC predicts that mainstream enterprise deployments of Web services will follow a distinct path behind the firewall and evolve to include trusted partners and dynamic uses.

Year:	Adoption cycle:
2002-2003: Within the firewall	<ul style="list-style-type: none"> • Simplified application integration. • Increased developer productivity.
2003-2005: Contained external users	<ul style="list-style-type: none"> • Simplified business partner connectivity. • Richer application functionality. • Subscription-based services. • Casual/ad hoc use of services.
2005-2008: Fully dynamic search and use	<ul style="list-style-type: none"> • New business models possible. • Commoditization of software. • Pervasive use in nontraditional devices.

but we have not decided if we're using a two-prong plug or a three-prong," he says. "Just being compliant with the SOAP specification

doesn't mean that my SOAP client will work with your SOAP client."

That fact is born out by the

See Web services, page 10

Microsoft, partners to focus on Web services

■ BY JOHN FONTANA AND DENISE DUBIE

NEW ORLEANS — Microsoft this week will continue its campaign to demystify the company's .Net and Web services efforts at the annual Tech Ed conference in New Orleans.

The company will officially launch Commerce Server 2002, a .Net server and accompanying tool kit for building, deploying and managing e-commerce storefronts. This new version of the server includes new catalog features and is closely integrated with Microsoft's Visual Studio.Net. Microsoft is working to align the stable of 12 .Net servers, which includes Windows 2000, with its Visual Studio.Net development tools.

Microsoft's .Net Web services platform is a means of delivering software as a service instead of in shrink-wrapped packages. The platform consists of the .Net servers, a range of client devices and development tools. The theme of the conference will be the unification of those three areas under the .Net banner, including where the effort is today and how it will evolve.

Observers say Microsoft has some explaining to do.

"What is unclear to me is what dependencies does .Net have on Windows.Net Server, and what can I do with that server that I cannot with Windows 2000," says Dwight Davis, an analyst with Summit Strategies. "If people are actively deploying .Net on the current stuff, why do I need all this stuff that is coming out?"

As always, Microsoft will get support for .Net from a gaggle of partners at the show.

NetIQ and Compuware will show the latest revisions of software designed to secure and manage Microsoft environments, respectively. Enterprise Management Associates analyst Jeb Bolding says widespread adoption of Web services won't happen until vendors can guarantee users that those

services can be secured and managed.

"These vendors are taking a first step toward securing and managing disparate applications and transactions outside of the firewall," Bolding says. "I don't think too many users will be taking many steps toward distributed Web services until security and management are resolved."

For its part, NetIQ will debut Security Management Pack for Microsoft Operations Manager (SMP for MOM) and Security Manager 3.5. SMP for MOM lets users manage security from a single console, and the software can send

notifications of security breaches. The package includes management modules for Microsoft Windows Security, NetIQ Security Analyzer and antivirus applications.

With Security Manager 3.5, NetIQ adds integration with Internet Security Systems' Real Secure product line and Cisco PIX Firewall appliances. The security software, which monitors security data from separate security devices across a network, now also supports Office XP and XP Professional software.

SMP for MOM and Security Manager 3.5 are available now. SMP for MOM 2000 is priced at \$470 per processor. Pricing for Security Manager 3.5 starts at \$900 per server and \$35 per workstation.

Also at the show, Compuware will display its Vantage 8.0 suite of performance-monitoring software that now supports .Net applications (see www.nwfusion.com, DocFinder: 8847). The products can test the viability of .Net applications before users deploy them. Specifically,

Application Expert now can help users identify delays in HTTP, Simple Object Access Protocol and XML payloads, which may help to better track the performance of Web services, Bolding says.

Products in the Vantage 8.0 suite range in price from \$25,000 to \$35,000.

A number of companies will announce products around Commerce Server 2002. Equilibrium will unveil integration of its MediaRich Image Server with Commerce Server 2002. The server features automatic image processing that renders images for the Web or mobile devices. CyberSource will unveil CyberSource Commerce Component, which provides access to e-commerce transaction services, including global payment processing and tax calculation. And Fast Search & Transfer, which develops search and real-time alert technology, will announce that its product is integrated with Commerce Server 2002. ■

MOM's security blanket

NetIQ's Security Management Pack for Microsoft Operations Manager (SMP for MOM) lets users monitor security events across their network from a single console.

The SMP for MOM software alerts net managers of security breaches, detailing where and when they occurred.

The software shows a brief list of what happened across desktop from a single screen.

Net managers can drill down into security events and remotely manage access to users' desktops.





Regional Floral Network, January 14



Regional Floral Network, February 14

Sniffer probes get management boost

Advances could make it easier for companies to track application performance.

■ BY DENISE DUBIE

SANTA CLARA — Network Associates' Sniffer Technologies arm last week announced that it has added central administration and Web-based access capabilities to its distributed network probes, moves that could

help companies more quickly determine the source of network and application performance problems.

While the beauty of Sniffer probes is that they can be distributed across an enterprise network, that also has been the problem with them. Network

staffers have had to trudge out to each probe to find out what the probes have detected and consolidate those findings manually.

The company's new Sniffer Enterprise Management Architecture is designed to change all that by giving network staffs the ability to access and upgrade the probes remotely from any computer with a Web browser and analyze data collected by multiple probes.

The architecture is based on three components:

- The existing Sniffer Distributed probes, appliances that passively collect traffic data on network segments.

- Sniffer Resource Manager, which provides centralized control over the probes via a Web interface. This new offering is available either as software that runs on a Windows NT/2000 box or as an appliance. In either case, Resource Manager communicates with probes via HTTP.

- Sniffer Watch, which collects data in a SQL Server database and generates reports on network traffic. It is available as software or an appliance.

Eric Hemmendinger, a research

director with Aberdeen Group, says the enhancements take the probes out of the basic network diagnostics realm and into that of application management. Customers could use the products to determine how an application is running based on traffic statistics from across a network, perhaps quicker than they could with traditional network management systems that primarily track network device performance.

"Here's a company that basi-

cally developed the concept and the brand of the 'sniffer' probe. Now they're making that network diagnostic tool do more," he says. "In a year, Sniffer won't be a techie-only tool. Application-level managers will be using this for debugging and deploying applications."

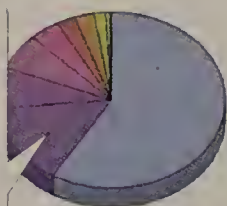
Sniffer Distributed probes are priced at \$13,900 apiece, while Sniffer Resource Manager costs \$27,500 and Sniffer Watch costs \$30,000. ■

Keeping watch

Sniffer Watch can generate reports based on network traffic data collected by distributed probes.

Protocol Distribution : IP : Packets
FrameRelay::NAI WANic 600 Adapter OB161_2 [35]
12/31/01 12:00:00AM to 12/31/01 11:00:00PM

Net managers can see exactly how much and what type of traffic traverses their networks at any given time.



NetBIOS_SSP_T	58.6%
IP_Others	15.2%
NetBIOS_DGM_U	7.3%
HTTP	6.0%
SMB	4.2%
ICMP	2.8%
DNS	2.7%
NetBIOS_NS_U	1.0%
HTTPS	0.5%
FTP_Ctrl	0.2%
Total:	100.0%

The type of traffic is broken down into bytes and packets so network managers can quickly determine their networks' "top talkers."

Protocol	Bytes	Packets
NetBIOS_SSP_T	2,179,389,263	7,523,964
IP_Others	1,301,208,096	1,949,146
NetBIOS_DGM_U	263,989,949	936,804
HTTP	477,987,528	870,169
SMB	122,477,890	538,433
ICMP	27,470,529	354,530
DNS	41,683,128	348,517
NetBIOS_NS_U	21,564,648	232,478
HTTPS	38,886,832	66,397
FTP_Ctrl	1,898,643	27,062

SnifferWatch creates reports based on LAN, WAN or application, depending on the network manager's request.

Speedera expands security

■ BY JENNIFER MEARS

SANTA CLARA — Content delivery service provider Speedera Networks is pumping up its security capabilities, giving customers the means to secure downloads and protect Web sites.

The services come in response to growing customer demand to help steel Web sites against threats such as denial-of-service (DoS) attacks and content theft. With the new offerings announced this week, Speedera will have security packages specifically designed for streaming media, Web site delivery and digital downloads, says Gordon Smith, a Speedera vice president. The services augment secure streaming that Speedera unveiled last fall.

One of the new services, Secure Content Delivery, supports Secure Sockets Layer encryption and lets customers hand off DNS responsibilities to Speedera, which can distribute DNS across its network of edge servers that are tied to more than 1,000 carrier networks. By distributing DNS servers, Smith says, Speedera can protect Web sites from DoS attacks that otherwise could cripple a Web site running DNS in a single location.

Customers who choose to place their entire Web

sites on the Speedera network, rather than using Speedera only to deliver specific graphics or pieces of content, benefit from an additional line of defense, Smith says, because all Internet requests are filtered through Speedera's edge servers. The customer's origin servers are inaccessible from the Internet, he adds.

The other new service, Secure Download, lets customers require authorization and authentication for content that is downloaded from the Internet's edge. That lets users offer pay-per-view or subscription-based downloads.

Speedera competes with CDNs such as Akamai Technologies, Mirror Image and Digital Island.

Secure Content Delivery is available, and pricing starts at \$1,500 per month. If Speedera is delivering an entire Web site, pricing starts at \$3,000 per month. The Secure Download Service will be available next month, and pricing starts at \$1,500 per month.

Both security packages are available as part of Speedera's SpeedSuite Enterprise offering, which bundles everything from bandwidth and storage to complete site delivery and live streaming. SpeedSuite pricing starts at \$7,500 per month.

Speedera: www.speedera.com

Web services

continued from page 8

recently formed Web Services Interoperability Organization, which is developing a set of guidelines for creating compatible implementations of the base Web services protocols.

Despite the promise of Web services, Borges says the age-old problems of distributed computing still exist, such as data mapping, transactional integrity, trust and security.

Some of those problems mean Web services won't become an inexpensive alternative to Enterprise Application Integration (EAI) technology. Borges says SOAP adapters in the near term won't replace "fat" EAI adapters that link data and handle business logic.

"You still have to map all the data and develop metadata tags. You have to run the business logic on an app server and

that can present throughput issues," he says.

IDC's Hailstone says that companies will have to build large, clearly defined Web services components, or run the risk of overwhelming current infrastructures.

"The use of too many small Web services components will create a performance problem when you consider authentication issues, managing transactions and business-process modeling," he says.

Outside the firewall, problems intensify.

The vision of dynamic discovery of Web services is a model riddled with questions, foremost being the dynamic discovery of partners and their services through a Web services Yellow Pages directory called Universal Description, Discovery and Integration.

"The complexity of building a Web service that looks in a directory to find a function and use it, that is possible, but I still have to negotiate costs, service-level agreements, contracts, and to do all that in an automated sense is beyond the technology now," Hailstone says.

Trust also is a major issue, especially without a standard, single sign-on authentication system.

"We still don't have a security framework, the Liberty Alliance doesn't yet have a blueprint and Microsoft's Passport is not widely accepted," Borges says.

Despite the limitations, experts say Web services are here to stay.

"If the grand model fails, that does not mean Web services have failed," Hailstone says. "There is too much invested by the large vendors for Web services to fail." ■



THIS WEEK'S QUESTION:

What's the name of the research and development consortium formed in 1988 to focus on cable telecommunications technologies?

Answer this and nine additional questions online and you could win \$500! Visit NetworkWorldFusion.com and enter 2349 in the Search box.

www.nwfusion.com



Online Gift Retailer, October 24



Online Gift Retailer, December 24

Dell rolls out blade server

PowerEdge 1550MC targets Internet data centers.

■ BY DENI CONNOR

NEW YORK — Dell last week finally jumped into the server blade fray with hefty, single-board computers attuned to load balancing, Web serving and caching for businesses.

The company announced a server blade, the PowerEdge 1655MC, which does not trade off features such as memory or network connectivity in favor of density. Customers, Dell says, are looking for blades to fill out their Internet data centers that replace compact, 1U-high (1.75-inch) servers.

Dell also announced two high-end servers and a set of rack-mounted modular components for network support, storage and processing known as bricks. The company will introduce less

powerful, low-power consumption blade and InfiniBand-enabled bricks in the future.

"Dell is focusing on high-performance instead of the modular low-power, high-density space," says Jamie Gruener, an analyst with The Yankee Group. Gruener says the market for server blades is expected to grow from \$150 million this year to \$3.5 billion in 2005. "Dell has a [blade] road map that will position the company at the higher end of the market."

Dell's blade uses the Pentium III 1.26 GHz processor, compared to 700MHz to 800MHz blades from Compaq, RLX Technologies and Hewlett-Packard. Compaq says although its blades presently use low-power processors, it will have blades that match Dell's by the time the Dell blade server ships

Blade bonanza

Dell's PowerEdge 1655MC multiprocessor blade server uses high-performance Pentium III 1.2-GHz processors.



Vendor	Product name	External disk supported	Internal disk capacity	Number of blades/enclosure	Type Ethernet NIC	Price
Dell	PowerEdge 1655MC	Yes	146G bit SCSI	6/84	Two 10/100/1000	Undisclosed
Compaq	Ble-Class	No RAID; yes NAS	30G bit ATA	20/280	Two 10/100	\$1,800
HP	bc1100	Yes	30G bit IDE	16/48	Two 10/100	\$1,925
RLX Technologies	ServerBlade 800i	No	40G bit ATA	24/336	Three 10/100	\$1,550

this fall.

Dell also has room on its blades for onboard and external storage, letting businesses rapidly scale their environments.

Compaq and RLX blades support limited 30G to 40G bytes of onboard disk capacity, while Dell provides 146G bytes of onboard storage and an embedded RAID

controller, to which SCSI storage arrays can be attached. HP's blade is different — it places external storage on 12 specially designed storage blades. Compaq says that network-attached storage can be attached to its blades via an embedded Ethernet adapter.

Peter Strifas, senior engineer at Mount Sinai Medical Center in New York, says that although he may not buy blades this year because of budget reasons, he has looked at blades and finds them attractive.

Strifas is looking for a blade that he could run single applications on, much as he would do on a 1U server. "We need an easy connection into a back-end SAN and compact equipment," Strifas says. With Dell's SCSI controller, he could connect it to a Fibre Channel router and then to his Compaq or EMC storage-area networks.

Dell also introduced two high-end servers intended for transaction-based applications in corporate data centers. The PowerEdge 6600 and 6650 can support up to four Intel Xeon MP processors.

Dell also plans to make low-power blades for Web-server applications and brick servers optimized for transaction-intensive applications such as customer relationship management and databases.

Dell will not disclose the price of its blades until they ship this fall. The 6600 and 6650 servers are expected to ship next month for \$5,500 and \$5,200, respectively. Bricks are expected before year-end.

Dell: www.dell.com

Check Point

continued from page 1

T-1 frame relay circuit costs \$1,500 to \$1,600 per month, Cochran says. And customers would still pay for their Internet connection. If users want a frame link to connect to more than one site, they pay an additional fee per permanent virtual circuit (PVC) per month. A virtual circuit is roughly analogous to a tunnel in that it enables a link between specific sites. A 64K bit/sec PVC from AT&T costs \$126 per month, list price.

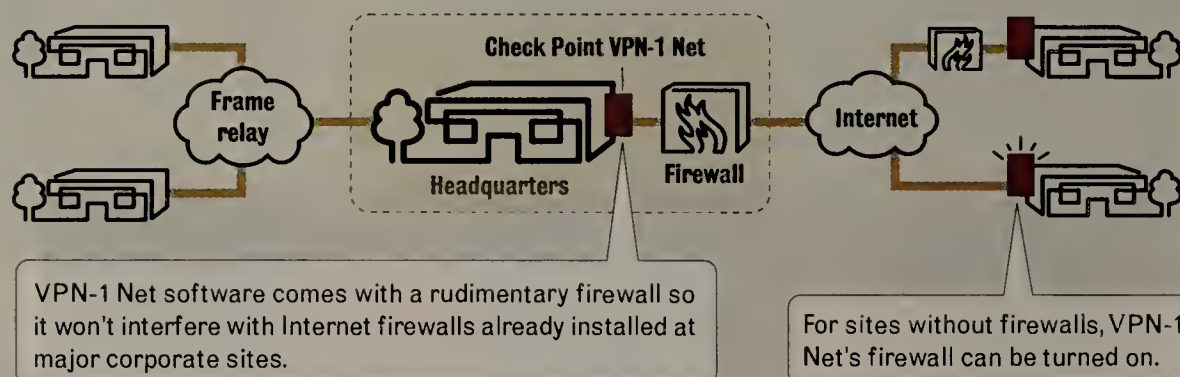
Still, if the IPVPN option becomes attractive enough so corporate users at least try it, they might find it is inexpensive enough to tie in more locations, Cochran says. According to Vertical Systems, last year there were 1.2 million frame relay links in place vs. 196,000 IP VPN connections.

Competitors such as NetScreen, Nortel, Rapidstream and WatchGuard come with full firewalls, and an entire line of Cisco VPN gear is based on its PIX firewall. "I haven't seen anyone else roll out anything like [VPN-1 Net]," says Jeff Wilson, who researches VPN vendors for Infonet Research. "[This software] can ease some cost and complexity fears that people have about migrating sites away from frame relay."

The VPN-1 Net firewall running on a server or a custom VPN appliance made by one of Check Point's hardware partners, can be set so that it doesn't interfere or compete with whatever firewall is already protecting corporate Internet connections. But the VPN-1 Net firewall can be turned on at sites that might not have one yet.

VPN to supplement frame relay

Check Point's VPN-1 Net is designed to make it easier to drop VPNs into corporate networks.



Frame relay users would lose some features if IP VPN were added. For example, frame relay comes with minimum bandwidth guarantees, while VPNs that rely on the Internet are subject to unpredictable delays. But it is much faster to turn up a VPN link to a site that has Internet access than to wait months for a frame relay connection.

Once frame relay networks were considered secure because they operate at Layer 2, but with heightened interest in security, users are becoming wary but also receptive to VPN technology that is secure from site to site.

"Administrators are beginning to question how well that frame cloud is managed from a security standpoint," says Christopher Arnold, network security architect for Wheelhouse, a maker of customer-relationship management software in Burlington, Mass. The company bases its five-site WAN on Check Point VPN/firewall software that runs on Nokia hardware.

Check Point is also

adding new management shortcuts in its software to make it easier to set up user groups and establishing hub-and-spoke connections, a common frame relay configuration. "You can set up a tunnel between end points in 60 seconds. Before, if you were really good at it, it took 30 minutes," Arnold says. These features come with Check Point's VPN-1 Pro software, formerly called VPN-1/Firewall-1 Gateway.

VPN-1 Pro also includes a graphical interface that simplifies adding a site and changing the user group that a particular site belongs to. "If you have a tight budget and are short-staffed, you can really appreciate this," Arnold says. "Once it's designed properly, it can be deployed by less experienced administrators."

VPN-1 Net and VPN-1 Pro are available now. VPN-1 Pro, including centralized management to connect a 500-person office with a 40-person office, would cost \$24,500.

Check Point: www.checkpoint.com



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Internet Tax Prep Service, September 14



Internet Tax Prep Service, April 14

HP Blade servers are here. The most flexible way to manage your infrastructure.

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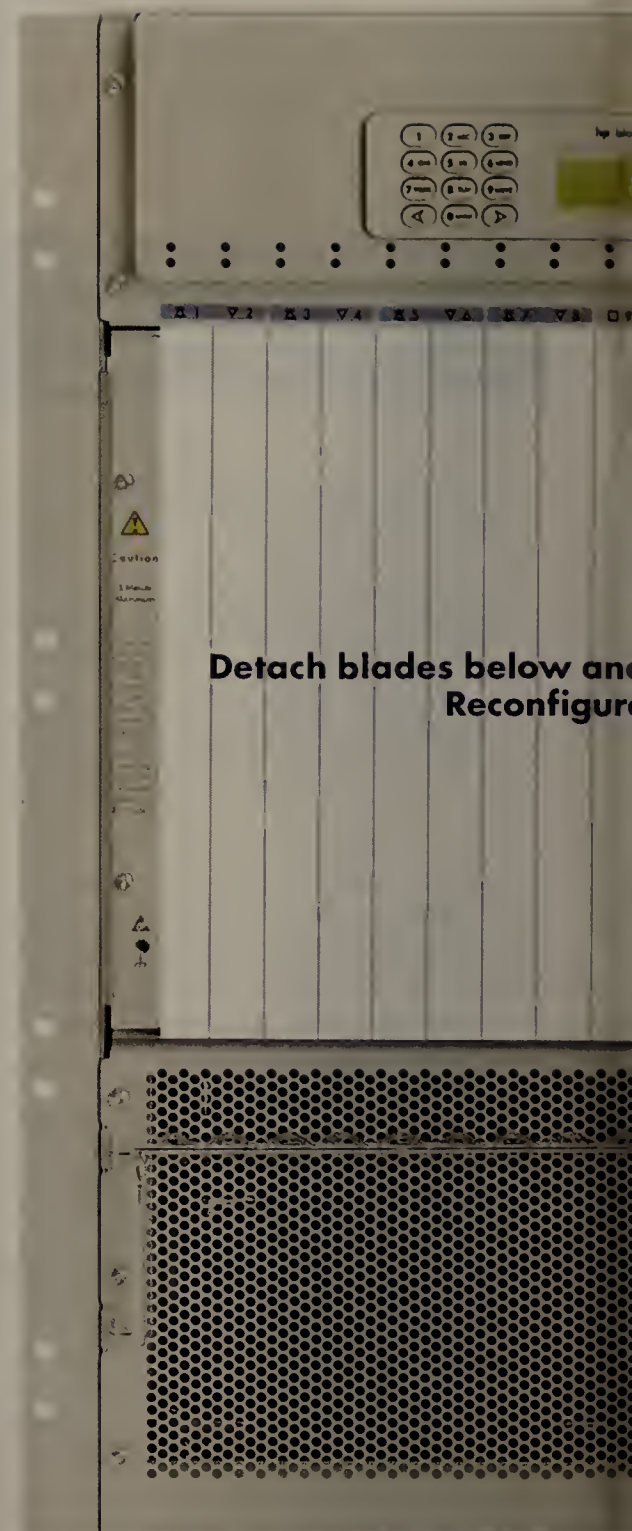
Easier to manage and maintain.

This elegant, standards-based design allows you to easily combine server, storage, networking, appliance and management blades in the same 38-slot chassis, then reconfigure on the fly to handle expanding or contracting workloads.

Each blade connects to the network infrastructure already embedded in the chassis, dramatically cutting the number of cables needed. With far fewer cables to fuss with, they're far easier to manage and maintain than conventional servers. Even management is shared. Which means all 38 blades can be viewed and monitored as a single system.

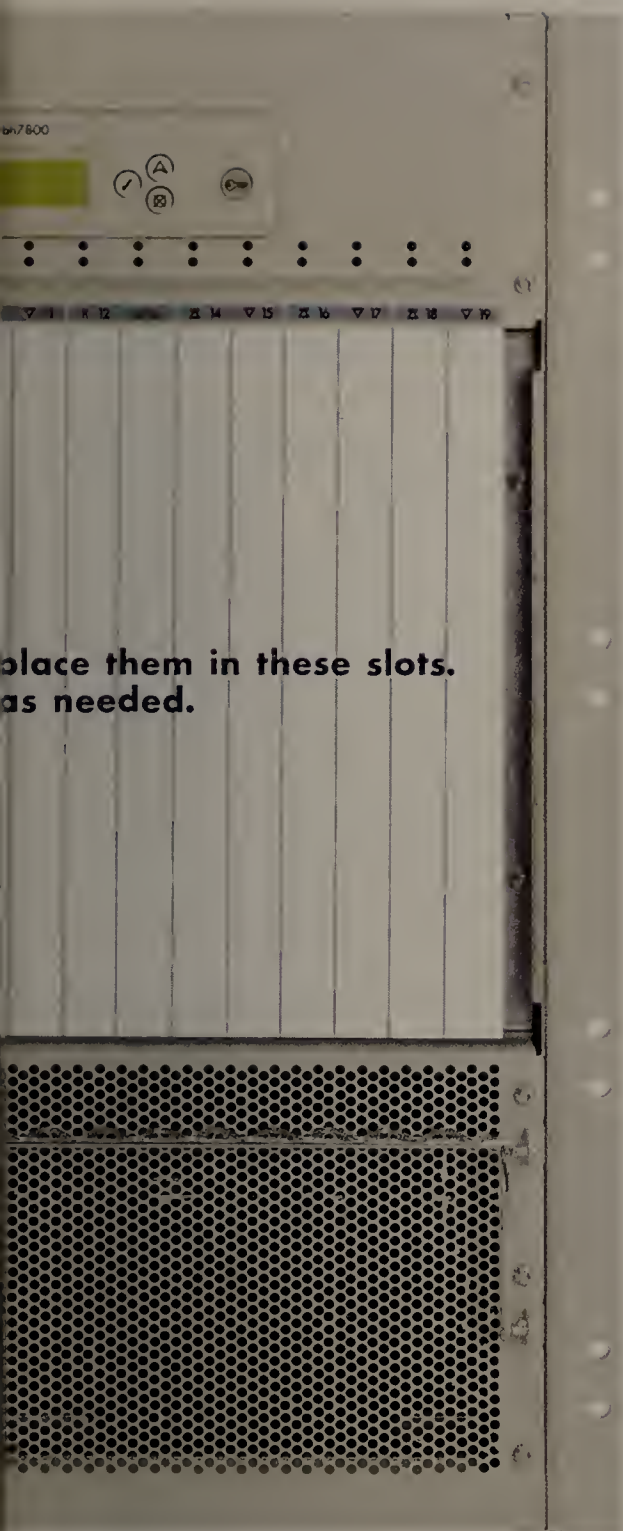
More efficient and reliable.

Since all blades in the chassis share the same power and cooling source, they're also more energy and space efficient. In fact, you'll find HP Blade servers



server blades

storage blades



reduce the typical number of fans and power supplies required by as much as 60%.

The reliability advantages of moving to blades are profound. To give you some perspective, imagine building a server cluster solution that is comparable to a fully loaded HP Blade server cabinet. The projected annual failure rate of the HP Blade server solution is about 41% lower than that of the comparable server cluster.

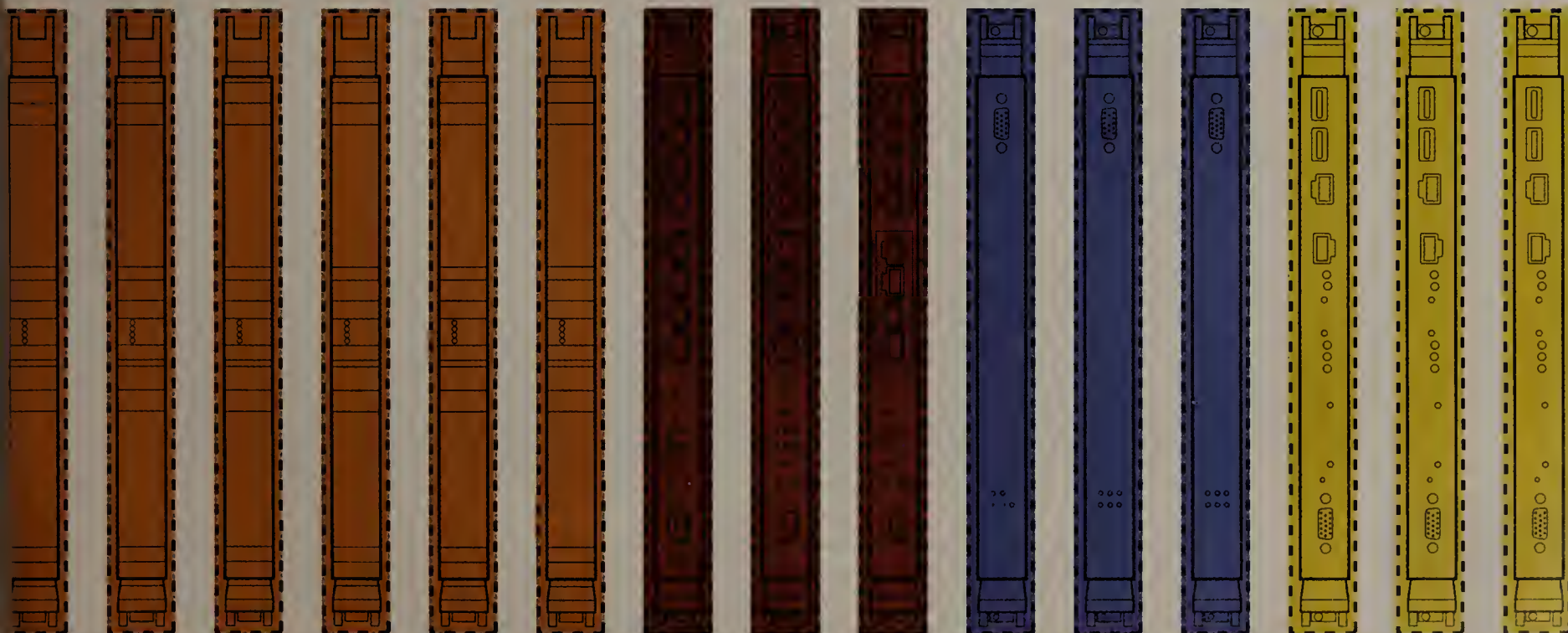
In the unlikely event that a blade should fail, the problem is isolated in the same way that multiple systems connected by I/O are isolated from each other.

Is your server as sharp as a blade?

Servicing a blade is as easy as deploying one. Each blade is freely accessible from both the front and rear of the cabinet and can thus be replaced at a moment's notice. Each slot can be powered on or off separately. Hot-swap and hot-plug technology is implemented throughout, allowing for the seamless addition or replacement of blades while the rest of your infrastructure continues to hum.

We invite you to read our technical white paper on HP Blade servers. Or, better yet, talk directly with one of our infrastructure specialists to find out more about how HP Blade servers can change the face of your business. Give us a call at 1.800.HPASKME, extension 246. Or visit www.hp.com/go/infrastructure.

Infrastructure: it starts with you.



network blades

management blades

optional blades

Verizon

continued from page 1

with Verizon being a no-show when we have lines down. (Verizon is dispatched by Sprint, which is the long-distance and data provider in this case.) Then Verizon closes the ticket and we have to start the process all over again," says Paul Lourd, director of IT for UST, a Greenwich, Conn., holding company for several tobacco and wine subsidiaries. The only service Lourd uses Verizon for is local voice and, based on his experience with Verizon's service, he doubts he'd consider using the provider for anything else.

Gian Zoppo, CIO for marketing outfit Porter Novelli International's U.S. region, says he'd like to see Verizon and other providers work on putting together service teams that could handle business customer calls from start to finish. To resolve a trouble ticket now, a customer has to usually call at least a local provider and long-distance provider and handle the coordination between the two.

"The promise of deregulation was that you'd get better pricing and more services," he says. "The reality is that it takes so much time to coordinate the vendors that any savings you get are likely consumed by the extra people you need to handle the tasks."

2. Offer competitive pricing.

"When it comes to the last mile, Verizon is the Big Kahuna. I'd just like to see them recognize that there is some competition in the marketplace," says Paul Ladd, director of MIS for Suffolk University in Boston. "When we talked to Verizon about a transparent LAN service, the price was way too high," he says. "Yipes [which Ladd selected for the service] gave us three times as much bandwidth at half the cost." (Note: Yipes Communications filed for Chapter 11 bankruptcy protection in March).

3. Better business DSL services.

"I'd like to see Verizon offer more in the way of broadband services that can be customized to the user's needs," says William Horst, assistant regional administrator for the Government Services Administration (GSA) in Boston. "Verizon is sitting on its residential asymmetrical DSL offerings instead of adding any symmetrical DSL services for business. Their deployment seems to ignore the need for speeds beyond 768K bit/sec to support remote business offices using pricey digital data services."

4. Improve data-circuit implementation times.

Millipore, a Medford, Mass., bio-

science company, is in the process of installing fiber to three Massachusetts sites, so it no longer has to deal with Verizon. "They have a tremendous data-line backlog," says Ram Prabhu, director of corporate telecommunications. Millipore has several international sites that are connected to the company's headquarters through dedicated lines. Verizon is responsible for installing the last-mile local loop on those lines. In the past, Verizon would have the local loop installed before the international circuit was up. "That changed in 2000," Prabhu says. Now the local loop is always the last part of the line to be finished.

5. Offer number portability between central offices.

Eastern Bank, a Boston financial institution, uses Verizon for its corporate headquarters and all 46 of its branches. Within the next few months, Eastern plans to move one office to a larger facility, located closer to the corporate headquarters. The office will now be served out of a new central office. Verizon has offered to forward the office's existing Centrex numbers from the old central office to the new numbers that will be assigned to the office at the new central office, but there is a recurring charge for this service, says Robert Primavera, an assistant vice president at Eastern. Primavera finds it odd that carriers can handle number portability if someone switches providers but not if a customer moves from one central office to another.

Porter Novelli's Zoppo says this is a service he'd also like to see. Porter Novelli, based in Manhattan, lost voice services on Sept. 11, because the company was served out of a central office located in the World Trade Center. Voice service was restored quickly, but Zoppo says the firm could not immediately get service through its original numbers — something that might have been possible if the numbers could have been moved to another central office.

6. Innovate.

"It's tough getting them to do anything outside the box.... There's not a lot of ingenuity there," says Laurence Cranwell, a senior vice president at managed service provider AimNet Solutions of Norwalk, Conn. (However, he notes that Verizon recently has responded to AimNet's specific need for SONET technology, whereas others could not).

The GSA's Horst concurs, noting that he'd like to see Verizon come out with some kind of voice over IP through Centrex offering.

7. Improve support levels in general.

"Their support level has really deteriorated over the last several years," says Bob Andrews, director of worldwide communications for Waters Corp., a Milford, Mass., testing equipment manufacturer. Waters has migrated several intrastate long-distance lines over to AT&T and Focal Communications because the company isn't satisfied with what Verizon has offered. "Verizon just doesn't seem to care if they compete with these guys," Andrews says. ■

Enterasys execs resign as bad news grows

■ BY PHIL HOCHMUTH

PORTSMOUTH, N.H. — Enterasys Networks' top executive and two other key officers resigned last week amid an anticipated revenue dip, an investigation by the Securities and Exchange Commission and the company's own internal accounting review.

Henry Fiallo stepped down as chairman, CEO and president. He will be replaced by interim CEO William O'Brien, a former PricewaterhouseCoopers executive. Also resigning were COO Jerry Shanahan and J.E. Riddle, vice chairman and executive vice president of marketing.

"The CEO resignation is due to a mutual determination between the former CEO and the board, and the realization that Enterasys needed different skills and experience to lead the company through the current challenges it faces," Enterasys spokeswoman Kristen Sheppard told Reuters news service. The resignations are part of a restructuring effort spurred by the company's projected poor sales over the last two quarters, says CFO Robert Galalis.

Enterasys also announced that its fourth-quarter 2001 and first-quarter 2002 revenue would be less than expected. The company notified the SEC in February that its fourth-quarter earnings report would be delayed because of an internal review of the company's finances by independent auditor KPMG.

Enterasys says it expects to post its first operating loss in the fourth quarter, which ended Dec. 29, 2001, and that it expects to lose money in the first quarter of 2002, which ended March 30. The expected fourth-quarter loss is the first for the company since it was spun off from Cabletron last August.

Enterasys' fourth-quarter 2001 revenue will fall between \$145 million and \$155 million, while first quarter 2002 revenue is expected to be \$110 million to \$120 million. Both expected revenue figures come in far below analysts' expectations of approximately \$190 million for each respective quarter.

Enterasys attributes the poor first-quarter revenue to "the lengthening of the sales cycle due to difficult market conditions, poor sales execution, and the previously announced [SEC] investigation."

The company may also have to restate revenue in prior quarters of 2001 as a result of its internal review, Reuters reported. ■



Henry Fiallo steps down as CEO during troubled times at Enterasys.

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Correction

■ In the story "Juniper looks beyond core routers" (March 25, page 35), analyst David Berndt should have been identified as an analyst with The Yankee Group.

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Foundry, Nortel improve Web switch features

■ BY PHIL HOCHMUTH

SAN JOSE — Foundry Networks and Nortel are releasing new versions of their

Web switch software that could help businesses use Layer 4-Layer 7 switches for security, network device consolidation and traffic management, in addition to server load

balancing and Web content switching.

Foundry this week will release security and quality-of-service features in Version 8.0R of its ServerIron OS software, which

runs the ServerIron 400 and 800 line of Layer 4-Layer 7 switches. New features include transaction rate limiting, Layer 3 routing support, a built-in sniffer function and high-availability network address translation support. The software also can help consolidate the number of routers, switches and load-balancing devices in a data center into one ServerIron switch, the firm says.

ServerIron switches typically attach directly to servers in a data center, providing load balancing and distributing Web traffic among servers.

Technology called transaction rate limiting in ServerIron OS 8.0R can be used to limit the packets per second a client machine can be allowed to send to a server attached to a ServerIron switch. The limiting can be done on a per-application basis by limiting TCP port throughput. The feature could help prevent activity such as unauthorized Telnet access and "ping flood" denial-of-service attacks, and could keep clients from monopolizing network servers.

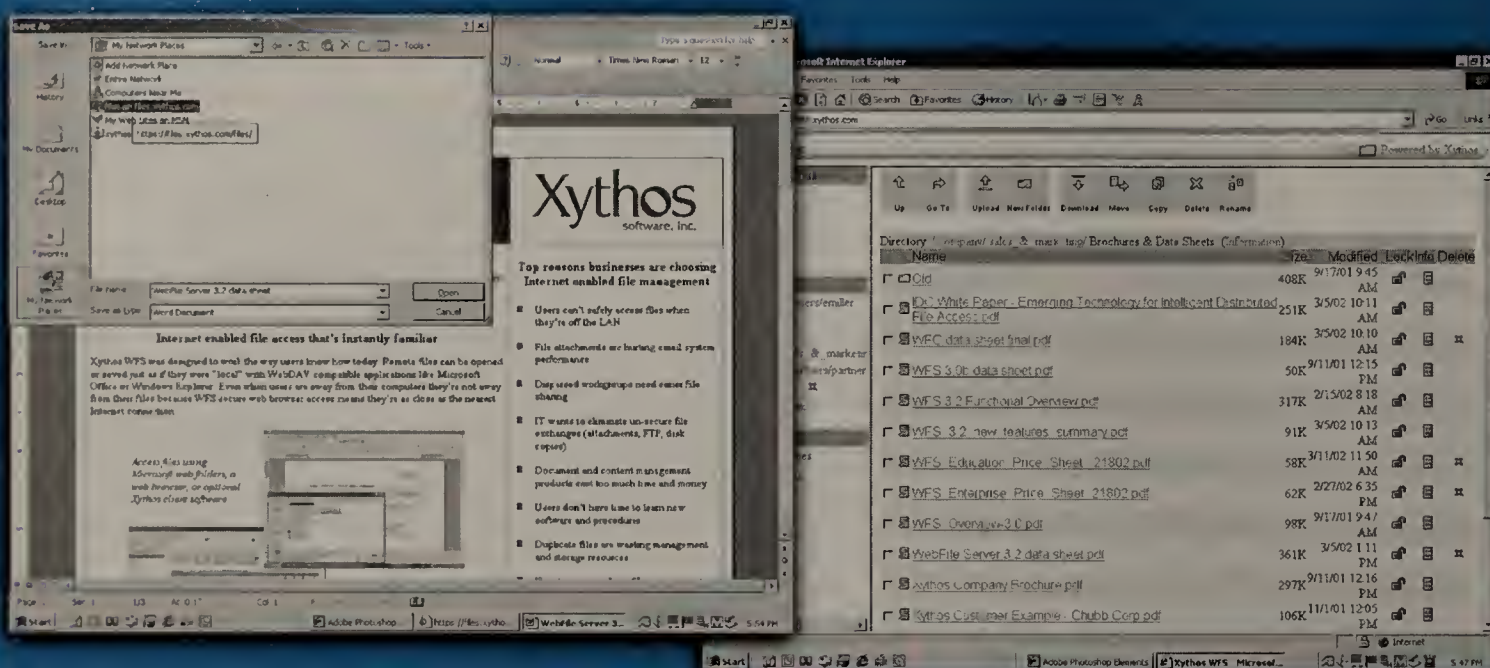
For more security, a flow-monitoring and capture function in ServerIron OS could be used as a built-in sniffer tool for filtering IP/TCP, User Datagram Protocol (UDP) and HTTP information, and shutting down applications or blocking ports if unauthorized or unwanted traffic is discovered.

"The new [ServerIron OS] lets us consolidate some switching, routing and health-checking functions, making things a little more manageable," says Robert Smith, CTO at Vingage, a Maitland, Fla., digital video distribution firm. Vingage lets clients access its large server farm for video content download and previously used two Foundry devices for Layer 3 routing, server load balancing and Layer 7 content switching. "Our data center is a lot simpler now, and works better," he adds.

Foundry's product releases follow Nortel's recently announced Web Operating System Version 10 (Web OS 10), which includes a deny-filter feature that could be used to inspect Layer 7 information in packets and block traffic carrying patterns that match viruses or hacker attack methods. Web OS 10 runs on all Nortel Alteon Layer 4-Layer 7 switches and switch modules. Upgrading to Web OS 10 on the switches could add security filtering to any point in a network, from the enterprise edge to the backbone and data center, Nortel says.

The Foundry and Nortel gear competes with load-balancing and Web-switching gear from vendors such as F5 Networks, Cisco, CacheFlow, Extreme Networks, TopLayer Networks and RadWare. Web OS 10 is available as a free upgrade to Nortel customers, while Foundry's ServerIron OS 8.0R is available for a \$15,000 upgrade and will be an option for new ServerIron 400 and 800 chassis. ■

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Short Takes

■ **PolyCom** has announced an IP phone that is compatible with **Cisco's CallManager** software. The **PolyCom SoundPoint 500CS** handset gives Cisco IP telephony users another option for purchasing IP phones. Previous CallManager systems only worked with Cisco IP phones. The new IP phone comes with 12 programmable keys and supports standard CallManager features such as call transfer, conferencing, speed dial, redial and call lists, and is comparable to Cisco's 7960 and 7940 phones, according to PolyCom.

SoundPoint 500CS has two built-in 10/100M bit/sec Ethernet switch ports for connecting a PC and the phone to a network over one network drop. The phone also can be powered Category 5e network cable when connected to a Cisco switch with inline capabilities and Cisco Discovery Protocol, eliminating the need for the use of an AC adapter at an end user's desk. The phone also supports Dynamic Host Configuration Protocol for IP address registration. XML support and an LCD text display let the phone run applications such as directory information, broadcast messages, stock quote tickers and limited Web browsing. SoundPoint 500CS is available for \$400. www.polycom.com

■ **Empirix** last week announced its **PacketSphere Storage Test Platform** will monitor iSCSI, Internet Fibre Channel Protocol and Fibre Channel-over-IP protocols. The device simplifies the testing of IP storage devices and applications such as backup and mirroring. The device can insert latency and lost packets into data streams to analyze the resulting throughput and emulate real-time environments. The PacketSphere hardware connects to the network via a Gigabit Ethernet connection and can process more than 2.8 million packet/sec at Gigabit wire rates, the company says. PacketSphere STP starts at \$59,000 and is available now. www.empirix.com

Microsoft makes wireless case

Latest efforts put wireless support into enterprise servers.

■ BY JOHN FONTANA

REDMOND, WASH. — Microsoft is taking a new approach to the mobile and wireless markets that observers say might finally result in the company getting it right.

The company is blending wireless and mobile support directly into its enterprise network software. That's a departure from its past efforts, and a twist on the current strategies of other vendors.

"Microsoft's strategy to embed wireless access in its basic products is a good one, but it is not really a trend among vendors," says James Kobielus, an analyst with Burton Group and a *Network World* columnist. "IBM, Sun, Oracle and others all provide wireless access with separate proxies and gateways."

To be sure, Microsoft has had its struggles in the wireless market, from its early ineptitude with Windows CE to its break-up with its first platform partner, Wireless Knowledge. Even as recently as a year ago, Microsoft's mobile and wireless products were laggards and its strategy unorganized.

But with the multifaceted mobile and wireless market expected to boom — IDC estimates the worldwide market for mobile infrastructure software alone will more than quadruple from \$352 million this year to \$1.6 billion by 2006 — Microsoft wasn't about to give in. Observers say the company's persistence is about to start paying off.

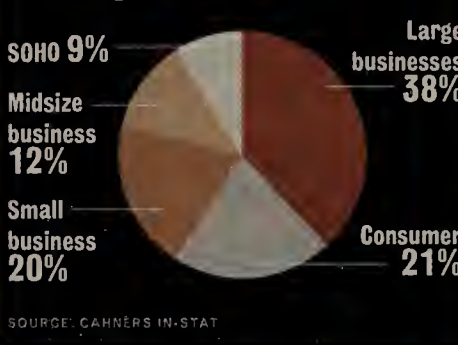
"Microsoft is now becoming a force in the enterprise mobile market," says Warren Wilson, an analyst with Summit Strategies. "Microsoft has all the back-end pieces and now they are trying to tie together .Net, Exchange, SQL Server and the other software. And that will help them become a force in the handheld market." Microsoft won't say how much it's investing in wireless and mobile, but says its Mobility Group last year received the largest incremental capital outlay of any division.

Mobile and wireless technology also is a key underpinning of Microsoft's .Net strategy, which promises to deliver software as a set of services available from any device. Microsoft is spending \$5 billion per year on .Net development.

"Today, if you look at wherever we mention the word Web and replace it with the word mobile, you get the idea of what we

Corporate wireless usage

Seventy percent of users who access data over a wireless connection are in small, midsize and large businesses.



are doing," says David Rasmussen, lead product manager for the .Net mobile developer platform. "It's all about making

mobility mainstream, making everything accessible. You can use exactly the same back end for everything from desktop to device."

Retooling the infrastructure

On the infrastructure side, Microsoft made a major strategy shift in February, committing to deconstruct its stand-alone mobile access server, Mobile Information Server 2002, and distribute its pieces among other back-end servers starting in early 2003.

Six months before, responsibility for MIS 2002, which provides secure access from wireless devices to Exchange e-mail and Windows-based applications, switched from the Mobility Group to the .Net Platform Group.

That group is putting MIS 2002's **See Wireless, page 22**

3Com pushes Layer 4 switching to wiring closet

■ BY PHIL HOCHMUTH

3Com last week released a new workgroup switch that could help IT shops interested in deploying Layer 4 traffic prioritization right now or in the near future.

SuperStack 3 Switch 4400 SE could be deployed as a regular Layer 2 Ethernet switch for connecting desktops to a LAN or upgraded to a Layer 4 switch that could be used to enforce business policies, such as server and application port access.

The box comes with 24 ports of 10/100M bit/sec Ethernet and one slot for a fiber or copper Gigabit Ethernet uplink port. The switch supports standard Layer 2 Ethernet virtual LAN and traffic prioritization with 802.1Q and 802.1p, respectively.

Up to eight 4400 SEs can be linked with stacking modules, which let the stack be managed as a single device with one IP address. Gigabit uplink ports can also be trunked into one virtual pipe — as fast as 8G bit/sec — for improved uplink speed and resiliency.

With a Layer 4 software upgrade, the switch can be used to enforce policies based on Layer 4, or the transport layer, of

an IP packet. Such information could include User Datagram Protocol (UDP) or TCP port. Network policies based on Layer 4 could be used for limiting different types of traffic on specific end-user switch ports, or for prioritizing certain packet types, such as database or application server traffic.

3Com says that enforcing Layer 4 traffic rules at the desktop instead of the LAN distribution level or core, which is a common method, could help alleviate the burden on distribution or core switches and possibly improve backbone traffic performance.

The SuperStack 3 4400SE will compete with workgroup switches such as Cisco's Catalyst 3500 series, HP's ProCurve 2500 series switches and Foundry Network's FastIron stackable switch.

The SuperStack 3 Switch 4400 SE is available now for \$1,300, and the Layer 4 software upgrade will be available this quarter for \$500. ■



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Security: Take a deep breath and count to 10

could jump-start your car while it's sitting in your garage, which, while true, is a fairly remote possibility — and one you'd probably notice while it was occurring.

Nevertheless, it's symptomatic of the sort of headlines anyone can grab by claiming to discover another vulnerability in Windows. This necessitates that engineers who might more profitably spend their time working on the next version of Windows spend a few days or weeks creating a patch for the supposed exploit. This is followed by testing of the patch to be sure it doesn't break some other part of the operating system or interfere with major software packages that might be installed.

At best this takes time and money to test that could be more profitably invested in getting the next version right. At worst, the patch turns out to be worse than the security hole, breaking some necessary functionality, leading to a new round of patch-writing and testing.

While I don't wish to minimize the amount of time you spend making sure your network is secure, it is necessary to occasionally step back and ask if the cost of the solution is more than the cost of the problem.

Take the recent flap about SNMP vulnerabilities ("CERT warns of SNMP vulnerability with widespread impact," www.nwfusion.com, DocFinder: 8829). While a denial-of-service attack is a hole that should be closed, for the most part no patch is required — just good management by those in charge of the network.

Nevertheless, every vendor with SNMP-enabled products needed to hold meetings, discuss strategies, write press releases and — of course — issue patches. These patches mostly don't close holes but simply change default behavior — something any self-respecting network manager already should have done. It's your network: You need to take responsi-

bility for how it's set up and how it's protected.

Kearns, a former network administrator, is a freelance writer and consultant in Silicon Valley. He can be reached at wired@vquill.com.

Tip of the Week

For those of you old enough to remember NetWare 2.X you most likely have fond memories of **Snipes**, the server console-based "shoot 'em up" game. Good news! There's now a Linux version (www.nwfusion.com, DocFinder: 8830) — only single-user right now, but network support is promised.

Wireless

continued from page 21

Outlook Mobile Access into Exchange Server and tucking the security and authentication gateway into Internet Security and Acceleration Server (ISA). The group also plans to integrate mobile security with Active Directory and ultimately Microsoft's Passport authentication service.

"Bringing wireless into the core Exchange functionality makes sense," says John Prince, core technology manager for connectivity at energy giant Conoco. "But we have some concerns about bringing the gateway into ISA because we don't think it has the robustness and throughput of a high-end firewall." But Prince

says Microsoft is on the right track with its infrastructure changes. "The key is to build an application once and access it from anywhere."

To that end, Microsoft will build into the next version of SQL Server, code-named Yukon, mobile access to structured and unstructured data. That complements last year's release of SQL Server CE, which lets the database run on mobile devices and be synchronized wirelessly to the back end.

The Yukon technology also is the foundation for a new universal file system being built for Windows. And Microsoft's Content Management 2000 server already has mobile features built in.

Microsoft is now becoming a force in the enterprise mobile market.

Warren Wilson

analyst, Summit Strategies

On the management side, Microsoft says mobility will become an extension of existing server management, and mobile applications will be administered like Web applications are today. The next version of System Management Server, code-named Topaz, is getting mobile client features. The first beta-test version is due this month.

And this summer the company will release the .Net Compact

Framework for Windows CE, a mobile version of the .Net Framework run-time environment, which lets Web service applications run atop the .Net platform.

To build those applications, Microsoft released in February its Mobile Internet Toolkit as part of Visual Studio.Net. Rival Sun is countering with its Java 2 Micro Edition and a new Mobile Edition of its Forte programming tools.

"When Microsoft moves upstream from providing wireless e-mail access to .Net they see a broader scope for content delivery," says Ken Dulaney, an analyst with Gartner.

He says Microsoft is exploiting XML in its infrastructure products and its ability to separate the business logic from the presentation of data. "The business logic does its thing and produces output in XML and the presentation layer takes the feed, recognizes the device making the request, and delivers the formatted data in real time or by store and forward."

Device changes

As Microsoft revamps its infrastructure, it is pushing hard to align its PDA and phone software and enlist its partners to sell the strategy.

In March, the company ap-

pointed 12-year Microsoft veteran Pieter Knook to head a new division that combines the former network service provider and mobile devices group.

He is charged with integrating Windows CE and CE .Net, Pocket PC 2002 and SmartPhone 2002 operating systems with the overall mobile strategy, and developing partnerships with service providers to push the technologies to end users over rivals such as PDA leader Palm and phone king Nokia.

According to Gartner, Palm has 60% of the handheld market, but only a third of that in the enterprise market. In contrast, Microsoft has 20% of the market, but 80% of that is enterprise sales. Palm is countering with messaging and database servers to complement its devices.

Microsoft faces a different challenge in the mobile phone market. In February, company officials said they want to have software on 100 million mobile phones in the next three to five years. But today, only Samsung, Mitsubishi and Sendo have committed to using it. ■

QUICKTAKE

SMC's 9712G TigerChassis

SMC Networks recently released a chassis-based switch that could help a midsize business boost its network with Layer 3 switching and Gigabit Ethernet without busting its IT budget.

The SMC 9712G TigerChassis supports Layer 2 and Layer 3 switching on each port and includes 802.1Q virtual LAN support and four packet classification queues for traffic prioritization. The device also can act as a full hardware-based router, with support for Routing Information Protocol versions 1 and 2 and Open Shortest Path First routing protocols. The switch also can be managed with SNMP and remote monitoring management protocol.

Speed: 24G bit/sec total switching capacity.

Ports: Up to 96 10/100M bit/sec ports, 24 1000M bit/sec ports or a mix.

Where it runs: Midsize network core or high-density wiring closet.

Competition: 3Com's Switch 4005, Hewlett-Packard's Procurve Switch 4121A.

Price: \$3,120

Web address: www.smc.com



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Special Focus

PACKET DELIVERY: Quality of service in the enterprise.

Bandwidth: Quality over quantity?

■ BY TIM GREENE

There's been lots of talk about quality of service in LANs, but unless you're running voice, video or other unforgiving applications, you can probably solve congestion by simply throwing more bandwidth at the problem.

After all, according to IDC, the average worldwide price of a Gigabit Ethernet switch port is \$531 — with some individual prices just a fraction of that — and the cost is projected to continue dropping for the foreseeable future. By 2006 the average price per port will be less than \$200, IDC says.

These are affordable prices for many companies, especially if more bandwidth means not having to learn the ins and outs of underlying QoS technologies such as 802.1P and Q, Differentiated Services and type of service. These factors actually make it attractive to avoid implementing QoS altogether if possible.

"The only ones that I see turning on QoS in the LAN are those deploying IP telephony," says Lawrence Orans, an analyst with Gartner. And even some of those are ducking QoS.

The Auditor General's office for the state of Arizona has used IP telephony for 225 users for 18 months using Cisco gear without QoS, says Joe Moore, director of IT services for the office. "We just wanted to try the IP voice and see what we'd have to do about QoS," Moore says. "So far we haven't done anything, and we haven't had any major concerns." The only problem users report is an occasional echo on the line, and he's not sure QoS would solve that.

But Orans warns that eventually QoS may be needed. "It's like playing Russian roulette. Five times out of six, you're going to be OK. Then there will be those times when there's a lot of congestion on the network and someone picks up the phone, and they get inferior quality."

With even those who theoretically need it the most avoiding QoS, vendors are trying to make the technology more inviting. Vendors such as 3Com, Cisco and Alcatel include QoS technology in their LAN switches at no extra cost, giving users the option to turn it on. They also are developing QoS management software — available at extra cost — that configures service quality without having to dig into switch-by-switch configuration. This software lets customers set service-quality parameters for certain traffic on a graphical user interface, and then the software takes over to configure the affected switch ports accordingly.

Alcatel next month will ship a new software platform

called Policy View with OneTouch that simplifies configuration of QoS for common applications. Among other features, OneTouch has a shortcut for voice traffic that requires network administrators to type the subnet of the IP phones into a field to set up voice-quality service, and that's it. The software automatically chooses the simplest method to deliver the best possible quality of service, taking into consideration the capabilities of the switches involved. Users don't have to worry about the underlying technology.

Similarly, Cisco offers Cluster Management Suite to simplify setting QoS, Enterasys Networks sells NetSight Policy Manager to do the same, and Nortel has configuration wizards as part of its Optivity Policy Server. Users need these policy managers because parameters they can set to control QoS include source-destination addresses, protocol, User Datagram Protocol (UDP) or TCP port number, virtual LAN ID, ethertype values, rate limiting and

"We can crank up the delivery of bandwidth to the academic network during classes, and during these times turn down these resources to the residential network. When classrooms are not in their heavy-use time, we can crank up the residential network," Young says. The college uses videoconferencing to tie a remote author in to talk to a literature class and earlier this year streamed video of varsity lacrosse games.

Young says learning to run QoS was a matter of his network engineer and director of enterprise systems each taking two five-day training courses.

Looking to the future, Young says he hopes to implement an Enterasys feature called User Personalized

Networking, which deploys QoS to users instead of ports. Each end user is assigned QoS rights, and when they authenticate to the network their QoS profile is imposed on whatever device they log on from. So if a user worked for the day from a desktop in a different department, that desktop would be assigned a QoS profile to match the user's. Nortel says that in conjunction with other vendors, it is working on something similar that it plans to announce soon.

Vendors also are looking to integrate this user-linked QoS with wireless networking. Nortel says its goal is for users to

QoS mechanisms

Vendors rely on a variety of underlying technologies to provide quality of service:

IEEE standards 802.1P and 802.1Q

- Support quality of service at Layer 2.
- 802.1P provides for eight traffic classes drawn from priority fields in 802.1Q VLAN tags.

Differentiated Services

- Supports quality of service at Layer 3.
- Offers up to 64 priorities of services.

Type of service

- Supports quality of service at Layer 3.
- Supports eight levels of priority.

Defining QoS

Quality-of-service technologies are intended to handle what sheer bandwidth or data-compression techniques cannot — that is, guaranteed timely delivery of specific application data or resources to a particular destination or destinations.

QoS advantages

- Guarantees bandwidth for key applications and users.
- Can put off the need for faster network infrastructure.
- Can help in network planning by measuring and managing traffic flow.

QoS disadvantages

- Management-software packages are a must to avoid complex configuration challenges.
- Implementations may require swapping out some old gear.
- Can create political problems as battles arise over who gets the good QoS and who controls it.

Where will QoS have its greatest impact?

- Corporate networks using voice over IP and videoconferencing.
- Users of demanding applications such as SAP.

even time of day. "That's really too much for the average user," says John Mead, Nortel's director of software engineering for its BayStack products.

"All the major players have good quality of service at this time," especially those that sell voice and data equipment, such as Alcatel, Avaya, Cisco and Nortel, Orans says. Others, such as Enterasys, support QoS but don't sell voice gear themselves, he says.

In some environments, network executives need QoS because their end users will find a way to eat up all bandwidth no matter how much there is.

"You're always going to consume whatever bandwidth you have. I can toss meg[abit] after meg after meg at an [application], and it will be used at 95%," says Brian Young, CIO at Hobart and William Smith colleges in Geneva, N.Y. Increasingly sophisticated students bring more bandwidth-hungry gear to campus each year, he says, so he needed a way to prioritize who gets how much bandwidth when. To do this, the colleges use Enterasys gear.

log on to a corporate network from a public wireless hot spot and get their traffic handled with the priority they would get on the LAN. Enterasys says it has designed its QoS scheme to evolve to include wireless.

Implementing QoS on multivendor networks is still down the road. Despite being based on standards, QoS implementations vary from vendor to vendor. And because QoS involves inapping certain QoS fields to other QoS fields, interoperability becomes even more complex. So at the moment, users pretty much have to use one vendor's gear to effectively deploy QoS, Orans says. "Among vendors, we're not seeing a lot of interest in interoperability, but if you go to a single vendor, you're all set," he says.

A cooperative effort among vendors established the QoS Forum in 1999, but the group seems to have run out of gas. Its goal was "to educate the market and facilitate deployment of QoS-enabled IP products and services." It even had a Web site, www.qosforum.com, which still exists but lacks any information about the QoS Forum. Advances in interoperability will have to come from somewhere else. ■

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■ PRODUCTS, SERVICES AND STRATEGIES
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Time Warner: Bandwidth hogs, pay up!

Cable company decides heavy bandwidth users will pay an additional monthly fee.

■ BY MICHAEL MARTIN

The all-you-can-eat bandwidth buffet that cable modem users enjoy may soon

come to an end.

Later this year, Time Warner Cable will begin charging users a fee for downloading more than a monthly limit. The company has yet to release specific pricing changes.

The reason behind the move? Cable modem hogs cost cable companies money. Their networks are based on a shared infrastructure with several homes or businesses sharing a local access pipe. If one home or business is using its connection to transfer large amounts of data, performance for all other homes or businesses that rely on the same access pipe is affected. Ultimately, to ensure better performance for cable modem users on that portion of the network, the cable company has to segment the network by installing new equipment.

"Some users take up an inordinate amount of bandwidth," says Mike Luftman, a spokesman for Time Warner Cable.

Pricing plans

Here's how three major cable providers stack up now and a glance at where they're headed.

Company	Price	Plans
Time Warner	\$44.95 per month.	To charge heavy users extra later this year.
Comcast	\$39.95 per month; \$44.95 with modem rental.	No impending pricing changes.
Cox Communications	\$34.95 per month; \$49.95 with modem rental.	To introduce 128K bit/sec symmetrical services later this year.

"Anyone staying below a total amount of bits moved per month won't pay more. But if you consistently go over the limit, you're going to have to pay."

Telework programs for large enterprise customers won't likely be affected because they're already subject to special pricing plans handled by the cable companies' business divisions. But corporate

teleworkers for smaller companies, who regularly upload and download large graphics files, for instance, stand a greater risk of being affected than those who use their cable connection mostly for e-mail.

Unlike some restrictions imposed on cable modem users in the past, such as not letting teleworkers connect to their

See Bandwidth hogs, page 28

Takes

■ Despite the wide-scale availability of broadband services, the majority of U.S. consumers will continue to access the Internet via dial-up through 2006, according to the recent report "V.92-Broadening Narrowband" from **In-Stat/MDR**. The result will be a renewed interest in V.92 modems, which let users make a phone call while online, and offer faster connections and upload speeds. While only 11% of consumers use V.92 modems today, by 2004, In-Stat predicts V.92 modems will account for 100% of all consumer modems sold in the U.S. www.instat.com

■ **Harris Corp.**, recently announced a version of its STAT Scanner for small offices. A vulnerability assessment tool, STAT Scanner detects and fixes more than 1,400 Windows NT, 2000 and XP security vulnerabilities, and checks for the presence of the latest software patches for Windows operating systems, Outlook, Media Player, Internet Information Server and Netscape Communicator. The product costs \$99 per PC and is available from www.softwareshelf.com.

■ **SMC Networks** recently announced the **Barricade Plus Cable/DSL Broadband Router** for small to mid-sized businesses. The router includes a four-port 10/100M bit/sec switch with integrated stateful packet inspection firewall, and supports five Point-to-Point Tunneling Protocol and IP Security VPN tunnels. A wireless version includes an 802.11b access point and three-port switch, and supports roaming. Available in May, the routers will cost \$159 and \$259, respectively. www.smc.com

Creating a safety zone for home nets

■ BY MIKE AVERY

Lately, every time I'm on the Internet, I feel like a target. E-mail viruses, port scanners, Web pages with evil software are all active menaces. Then there's the endless parade of marketers trying to harvest my e-mail address or lure me to their sites with pop-up ads.

So when Zone Labs recently released Version 3.0 of its Zone Alarm Pro (ZAP) security product, I was eager to see how its protection stacked up against that of the corporate firewalls I'm accustomed to. I'm happy to report ZAP provides strong protection on several fronts while making Web browsing more enjoyable.

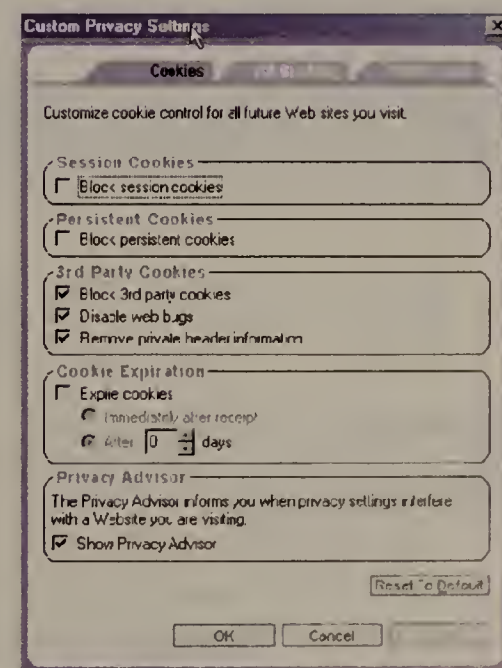
Zone Labs has long been known for its free Zone Alarm product. The company also offers a professional line with enhanced features that we tested via a Web site download. Installation on my Windows 98SE-based PC took less than 10 minutes. The program defaulted to a moderate level of security, and carefully explained each option.

ZAP traps

With Zone Alarm Pro on the prowl, it immediately detected the PC was on my local private network behind a firewall and asked whether this was a trusted network. From then on, every time any of my programs tried to access the network, ZAP requested approval. You may not realize how often programs on your PC try to access the Web without your knowledge — when you register an application, when it tries to update itself, or when spyware tries to send your personal information to its home base.

Like many corporate teleworkers, I connect my laptop to the Web through a variety of connections. In my home office, I use our test lab's Ethernet segment connected directly to the Internet. When traveling, I connect over a dial-up connection. After work, I connect through a home gateway. ZAP immediately detected each new network and asked questions about the connection.

When programs tried to communicate in unusual ways, ZAP clued me in. Every time I started the network troubleshooting tool



Crisp, clean and easy to understand, the ad-blocking control screen in ZAP makes it easy to control what appears on your browser.

Network Instruments Link Analyst, ZAP told me the program had tried to access an IP address at Port 60551. This suspicious behavior turned out to be benign — just

See Zone Alarm, page 28

NetworkWorld
Review

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Firewall program aims to protect remote offices

The firewall market is a pretty wild and wooly place. You've got hardware and software products targeting big companies and small, being built into routers and gateways, and gunning for consumers' desktops. Just as confusing is the variety of technologies in play. Do you want a proxy firewall; a network address translation firewall; one that employs stateful packet inspection?

Until now, the International Computer Security Association (ICSA) Labs firewall certification program has used a one-

size-fits-all set of criteria to test the security of firewall devices. As a result, some lower-end products have gone uncertified, leaving small-office workers and consumers to scratch their heads over technical jargon, weigh marketing hype and worry whether their networks are suitably protected.

The good news is ICSA Labs is about to unveil Version 4.0 of the certification program, which addresses the changing market. A two-step process, 4.0 certification requires a product to pass a baseline set of criteria, and also be tested against its target audience and the characteristics of the networks involved. Vendors must be tested in either the residential/consumer, small office/branch office/teleworker, or traditional corporate categories.

In the residential/consumer environ-

ment, the idea is "to protect users who don't know what a firewall is but think it's a good idea to have one," says Al Potter, manager of ICSA's network security lab. To pass the test, the firewall device must be easy to configure, and safe by default. It needn't support inbound services or include remote management features.

In the second category, the firewall device sits in the home office or branch office and is managed remotely by an IT administrator in the corporate office. Such a device must be connected and administered from the public side of the firewall through an encrypted channel, and should allow for some inbound services to an e-mail and Web server. The third category is a traditional corporate firewall, the criteria of which remains relatively unchanged.

"We shaped these categories to reflect the way they're being used," Potter says. "We each asked ourselves: How do I configure my firewall? The answer is, I allow everything out but nothing back in. That's fine at home but not for the enterprise."

Other activity at ICSA Labs includes the development of a new host-based firewall program for certifying desktop firewalls. This too will include separate modules targeting the corporate market and consumer markets.

Potter says the Labs will turn its attention later down the road to developing a module for measuring firewall performance. "Four or five years ago, the focus was on security, then on features. Now that these are a given, performance will become the primary interest," adds firewall programs manager Brian Monkman.

Zone Alarm,

continued from page 27

the way Link Analyst determines its IP address for building network maps. But I felt reassured that ZAP trapped it.

To check out how well ZAP hid my PC from port scanners and other would-be

spies, I tried the Leak Test at Gibson Research Center (<http://grc.com/lt/leaktest.htm>). Leak Test tries to get out through a firewall the same way a Trojan horse program would. ZAP stopped it cold. To do a port scan on the PC, I used IpSwitch's network monitoring/diagnostic program called What's Up Gold. ZAP shut down the first 64,000 port addresses, ensuring my PC was safe from attack.

New to Version 3.0 is the ability to stop malicious e-mail. Zone Alarm does this by quarantining e-mail that includes executable attachments. I tested this feature using Pegasus Mail for Windows, which I consider much more secure than Microsoft Outlook. When I sent myself executable attachments, they were quarantined, and I had to answer several questions before I could execute the attachments. This feature alone should all but eliminate Microsoft e-mail viruses.

Stress-free surfing

ZAP also made good on its promise to improve my Web surfing — controlling pop-up ads, cookies and banner advertising. While ZAP removed all pop-up ads and kept my identity hidden, the cookie manager doesn't let you permit cookies on one site but not another. The feature for controlling banner advertising was better. It let me turn off banner ads altogether, drop the

ads that take a long time to load, or replace such ads with a clickable box you can open if you want to see the ad.

Last, I uninstalled ZAP to ensure that it left nothing unpleasant behind. The uninstall was clean, and my PC worked well afterwards. But as soon as testing was done, I quickly reinstalled it. ZAP is staying on my computer until I find something better to take its place. ■



More online!

For an expanded version of this review, head to Net.Worker online.

DocFinder: 8832

Net Results

Zone Alarm Pro 3.0

4.7
RATING

Company: Zone Labs, (415) 341-8200 **Cost:** from \$49.95.
Pros: Easy installation, good security, enhanced surfing.
Cons: Limited control of cookies.

What's the score?

Zone Alarm 3.0

Security 40%	5.0
Ease of use 30%	4.0
Installation 30%	5.0
TOTAL SCORE	4.7

Individual category scores are based on a scale of 1 to 5. Percentages are the weight given each category in determining the total score. ■ **Scoring Key:** 5: Exceptional showing in this category. Defines the standard of excellence) 4: Very good showing. Although there may be room for improvement, this product was much better than the average. 3: Average showing in this category. Product was neither especially good nor exceptionally bad. 2: Below average. Lacked some features or lower performance than other products or than expected 1: Consistently subpar, or lacking features being reviewed.

Bandwidth hogs

continued from page 27

businesses via VPNs, the bandwidth limits are not aimed solely at business users. But in some cases, the restrictions could make cable access a more expensive proposition than companies had expected.

While charging heavy cable modem users more per month may drive some of them to other access methods, such as DSL, that's not necessarily a bad thing for cable providers, says Matthew Davis, an analyst with The Yankee Group.

Heavy users cost the cable companies a lot of money by forcing them to make network changes, and it's not necessarily worthwhile for the providers to keep the heavy users happy, Davis says. The cable providers will likely ensure that the additional charges aren't large enough to drive away droves of users, he adds.

Any pricing scheme the cable providers come up with is unlikely to deter telework programs from continuing to rely on cable modem access, says Dana Tardelli, an analyst with Aberdeen Group. "If it's \$40, \$50, \$60 or \$70 per month, it shouldn't matter because access is access and the job still needs to get done," he says. "If they doubled the price, it might be a problem, but I doubt they'd do anything that drastic."

While Comcast and Cox Communications each say they have no immediate plans to follow Time Warner's lead, now that technology that lets providers monitor network usage is available, it may be only a matter of time before they too

move to a usage-based system. Another sign of things to come: Cox has begun user trials of a tiered service for which customers pay more for guaranteed 128K bit/sec symmetrical speeds, says spokeswoman Amy Cohn.

In moving to a tiered pricing model, Cox is following in the footsteps of DSL providers.

Most DSL providers offer a variety of services. Consumer-class offerings typically provide download speeds of up to 384K bit/sec and upload speeds of up to 128K bit/sec with no service-level agreements (SLA). But DSL providers also offer business-class services, with symmetrical speeds, some SLAs and enhanced customer support at a premium price.

DSL providers seem happy with their tiered approach and have no imminent plans to introduce usage-based pricing. Part of the reason may be that DSL networks are less susceptible to bandwidth hogs than cable networks. DSL connections are dedicated until they hit the DSL access multiplexer (DSLAM) at the local central office. But bandwidth hogs could still affect performance for other DSL users on the same DSLAM if the connection from back into a service provider's Internet point of presence was not large enough.

Another reason DSL providers may not yet be looking at usage-based billing is because "they are more focused on troubleshooting their networks," Davis says. Ultimately, though, Davis says he thinks DSL providers will move down the same path as cable providers and begin to charge heavy users extra. ■



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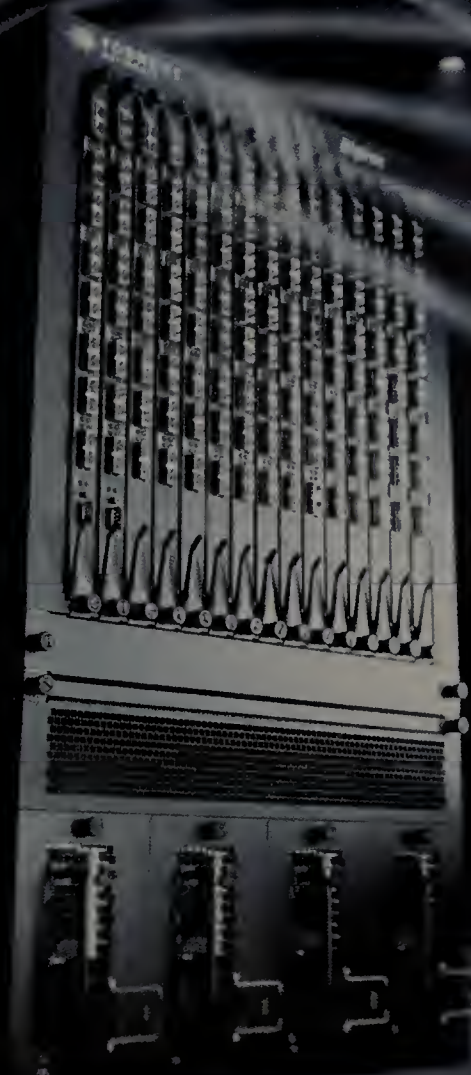
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Short Takes

■ Extending the availability of its business applications beyond the desktop, **IBM** last week announced **WebSphere Everyplace Access**. The software lets companies add handheld computers, mobile phones and other mobile devices to the list of clients that can access applications, all under a single IT architecture, IBM says. WebSphere Everyplace Access includes a client component and supports features such as synchronization. It extends the use of applications from IBM, such as WebSphere Application Server and the DB2 database, and software from IBM subsidiaries Tivoli Systems and Lotus. Pricing was not available. www.ibm.com

■ **Jive Software** is retooling its discussion forums collaboration software to support clustering and tout the program's ability to integrate with other systems using its available source code. Version 2.5 of **Jive Forums**, announced last week, features a module that lets enterprise customers run the software in a clustered environment to improve performance and ensure fault tolerance. The software costs \$6,900 per server for the enterprise version. Each additional server is \$2,300, including basic support and maintenance. www.jivesoftware.com

■ **Palm** extended its foray into the corporate software market last week with the introduction of a new product aimed at corporate software developers and system integrators who want to create wireless applications that can access company databases in real time. Palm's new **Wireless Database Access Server** lets customers create customized wireless applications using Integrated Development Environments such as AppForge and MetroWerks' CodeWarrior. The applications can access information in company databases in real time. The company did not reveal pricing for the products. www.palm.com

Q & A



Gupta touts Web services

Umang Gupta has a unique perspective on the network industry, having been at the forefront of the client/server application market as the founder of Gupta (now Centra Software) and now as CEO of

Keynote Systems, a company best known for its Web site performance and benchmark services. He spoke recently with Network World News Editor Bob Brown about the future of Web-based applications and the Internet itself.

What's your take on Web services?

Long term, they are a logical way for the world to go for a large class of applications, especially consumer-facing applications, but even interorganizational ones. How close they are is a different matter. There is a class of Web services we know are coming from Microsoft — Passport is a classic example that's already here. How they emerge from everyone else has only partly to do with the technology. A lot of it has to do with the right business climate. The analogy I would use was the original introduction of Windows in the early '90s. People often wondered what applications would emerge under Windows to replace the old character-mode applications, and while the initial applications were the classic spreadsheets and word processors, today of course there are thousands of [graphical user interface]-based applications. The same

level of unleashed creativity is going to determine how big Web services finally get. Once the general technology, standards and [software development kits] are available for people to build new classes of Web services, they will be everywhere.

Is this going to come down to another Windows vs. Java battle?

Ultimately it will end up being a form of a standards battle, but the bigger question is not Java vs. the Windows platform. The bigger question will wind up being desktops vs. devices.

How so?

The desktop battle is over, and the winner is Windows regardless of what happens with the antitrust cases. Whatever Microsoft offers, whether it's [Internet Explorer] with or without Java, that's what's going to dominate on the desktop. But to the extent that desktops themselves over time will end up being replaced or augmented by other devices, the battle is far from over as to what platform software will sit on these devices. If it's a phone it could very well be based on Java, Microsoft or even Nokia stuff. If it's a PDA it could be a Windows platform. But Java could have a shot also. Web services ultimately will succeed because there's a class of things people want to do with devices that are much better done with Web services than with software sitting on their devices. Location services for wireless are a very logical Web service. So I don't think in that particular case it's necessarily going to

See Gupta, page 32

Instant messaging takes 'financial' twist

■ BY CAROLYN DUFFY MARSAN

Eight of the nation's largest financial institutions are deploying a specialized, secure instant-messaging service from start-up Communicator, Inc., which also operates the BondHub and SyndicateHub information portals for financial services companies.

Communicator, Inc. will announce the financial institution deals this week. It represents one of the largest-ever corporate uses of instant-messaging technology.

The service, dubbed Hub IM, has several thousand users from Wall Street stalwarts such as Credit Suisse First Boston,

Goldman Sachs, J.P.Morgan Chase, Lehman Brothers, Merrill Lynch, Morgan Stanley, Salomon Smith Barney and UBS Warburg.

"We have signed up the eight largest

financial institutions and banks, and now they are deploying the system to all of their institutional employees and customers," says Leo Schlinkert, president of Communicator, Inc. "That will be [more than] 2,000 companies, with a starting user base and address book of about 30,000 users."

Hub IM uses what's called a federated directory system that lets the financial institutions — not Communicator, Inc. or individual users — control who has access to the service. So each firm controls its own directory system, while being part of a larger directory. With rival instant-

See Communicator, page 32

PROFILE: COMMUNICATOR, INC.

Location:	New York
Founded:	1999
Product:	Hub IM, secure instant-messaging service.
CEO:	Leo Schlinkert, formerly a managing director at Salomon Smith Barney.
Financing:	Privately held, self-funded. FY 2001 revenue: \$7.5 million.
Employees:	45

'NET
INSIDERScott
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Protecting PCs from being useful

<http://thomas.loc.gov/>). This bill, if passed and signed, would mandate that all "digital media devices" sold across state lines in the U.S. would have to include a "secure technical means of implementing directions of copyright owners for copyrighted works."

It also would be illegal to "knowingly remove or alter any standard technology in a digital media device lawfully transported in interstate commerce." For the purposes of this legislation, the term "digital media device" means any hardware or software that reproduces copyrighted works in digital form or converts copyrighted works in digital form into a form whereby the images and sounds are visible or audible. This would include your iPod MP3 player, your desktop or laptop computer, corporate IBM mainframes, TV sets, satellite receivers, your new microwave oven, your kid's new GameBoy and just about any other piece of elec-

tronic gadgetry you can imagine.

It is hard to know where to start when talking about what is wrong with this idea. But I will not begin by saying that copyright is a bad concept. The idea of copyright is in the U.S. Constitution — it protects me as an author and you as a consumer because you have more things to consume because the producers — me, fellow *Network World* columnist Mark Gibbs and Walt Disney — are better motivated to produce. But it does not follow that the only goal of civilization should be to protect copyright.

The main usefulness of computers comes from the fact that we do not have to decide how they are to be used when they are built. They are general-purpose devices. People can come up with new applications long after the boxes have been shipped, and anything that reduces this flexibility of use inhibits future innovation. Requiring that all computing hardware include, and be forced to use, any specific

function, copyright protection or whatever, means that there are restrictions to future uses.

Under the restrictions of the Digital Millennium Copyright Act, it will be almost impossible to come up with a reliable scheme because any discussion of flaws in a proposal could be prosecuted.

Copyrighted materials need protection, but it should not be at the expense of the technical flexibility that has been the most important driver of our economy during the last 20 years — particularly because the solution would not actually work.

Disclaimer: Harvard has trained lawyers on all sides in this fight (a good way to ensure the need for more lawyers). But none of them advised me in forming my opinion.

Bradner is a consultant with Harvard University's University Information Systems. He can be reached at sob@sobco.com.

Q A

Gupta

continued from page 31

favor Java or Windows. It'll depend on who's got the best devices and services.

How will devices actually handle these potentially complex Web services?

We went from a client/server world, which was largely a thick client and a thin server world, to the Internet world, which allows you to build around a thick server in thin client mode, even with diskless devices. With the next generation of devices and Web services, we'll be talking about thick clients and servers. On the server side, there will be a lot more intelligence needed to drive these Web services, but on the client side you're going to need some pretty smart software — browser software, device [user interface] software or what have you — that is capable of integrating data from multiple Web services and still presenting it logically to the client. These browsers themselves are going to have to get much smarter... We're already seeing that with [Internet Explorer].

How should network executives prepare for Web services?

Everybody's going to have to be making changes constantly. It's not going to be a one-time revolutionary thing. The big changes on the client side will end up coming from a vendor like Microsoft with a new version of its browser or device vendors that will integrate thicker browsers into their [user interface] software. On the server side, people will have to choose sides I suspect. If you're buying NT servers and standardizing

on them, my guess is you'll wind up with a lot of Microsoft standard services. If on the other hand you're buying Solaris or IBM or any of the other platforms that are potentially more scalable, you may get a different class of Web services. All the discussion about all of these companies working together is encouraging, but the devil is in the detail. We've all heard the talk of cooperation on standards for Unix for many years and we know how many variations of Unix exist.

What is affecting Internet or Web performance these days?

At a high level, it usually comes down to one of two things. Either the application is not well-constructed or it's not well-

connected. What we've found over the last few years is there was a large set of connection issues, so that you didn't even know if you had application construction problems. Four or five years ago, people were largely concerned with issues such as: Do I have the right bandwidth

“There's a class of things people want to do with devices that are much better done with Web services than with software sitting on their devices.”



Umang Gupta
CEO, Keynote Systems

supplier or Web hosting supplier? Today, though, this is less an issue because customers are smarter about choosing the right vendors and because of the consolidation in the industry that

has resulted in fewer but bigger and more reliable players offering these services. Now there are more issues emerging at the application level [and Keynote is evolving its product line to address such things as application-level performance and diagnostics].

Are content delivery networks having much of a positive impact on Internet performance?

In general they work well for static data. I'm not convinced, however, that's good enough. Most sites are 90% dynamic and 10% static, and over time they'll be 99% dynamic and 1% static ■



More online!

Go online for an expanded version of this interview.

DocFinder: 8834

Communicator

continued from page 31

messaging services, such as AOL's Instant Messenger, the service provider controls the entire directory.

Hub IM supports Lightweight Directory Access Protocol and integrates with leading directory products from Microsoft, Novell, Sun and others. Directory information is exchanged in real time between the Hub IM service and the participating financial institutions.

From a security perspective, Hub IM features password protection and automatically encrypts messages end-to-end. The service also guarantees message delivery.

Hub IM complies with the regulatory requirements of the National Association of Securities Dealers and the Securities and Exchange Commission regarding the retention of instant messages.

The service works with PC, Unix workstation and Apple Macintosh, and it can be accessed remotely over a Web browser.

From a user's perspective, Hub IM provides an open address book that lets users easily contact any of the 30,000 people currently listed without knowing their screen names or e-mail addresses. It also authenticates people, so users can be confident they are sending an instant message to the appropriate person.

"Hub IM is real. It's out of pilot mode. We have thousands of seats among dealers, and it's available to thousands of their customers," says Gary Reifman, product manager for Hub IM. "Tens of thousands of messages are going across the service each day. We have one-to-one conversations as well as many-to-many or meeting-style conversations."

Communicator, Inc. did not reveal the terms of its deal with the eight financial institutions. However, the managed service sells for \$50 per year, per user.

Communicator, Inc.: www.communicatorinc.com

Service Providers

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Q & A



Infonet's Collazo talks of weathering the storm

Infonet CEO Jose Collazo recently spoke with Network World Senior Editor Denise Pappalardo about his company's financial position and how longtime carriers have a better chance of surviving in this slow economic market. Infonet is one of the largest multinational telecom service providers, with a network that spans 180 countries and 3,330 cities. While Infonet's revenue of \$660 million in 2001 was far less than its two main competitors' — WorldCom with \$35.2 billion and Equant with \$3.1 billion — IDC says Infonet holds a strong position as one of

the leading global carriers.

Many service providers are suffering financially. How is Infonet faring?

Infonet is very fortunate because we're not involved in the financial troubles that most of the new entrants in the telecom space have found themselves. You have to divide the telecom space into two groups: the new guys and those that have been around for many years. A lot of these new players are going away and the competitive market will look like it did four or five years ago. In our case, we have \$500 million in the bank with \$100 million in debt. We're close to being cash positive.

What percent of Infonet's revenue comes from voice and traditional data such as frame and IP services?

Voice service revenue is less than 3% of our overall revenue. A large portion of our revenue is based on IP services because we have more than 1,000 IP VPNs running today. However, because these VPNs normally run together with legacy applications, they run over our frame relay networks. We have IP routers running over our frame infrastructure, and we manage it end to end. We don't break down revenue based on data service type; we look at it as data revenue.

See Collazo, page 34

Takes

■ **British Telecom** and **AT&T** have fully unwound their **Concert Communications** joint venture and completed the return of assets to the parent companies, BT announced last week. BT also has completed the termination of its Canadian joint venture with AT&T through **AT&T Canada**. AT&T and BT announced last October that they were disbanding the international joint venture, which was launched in 1998 because of mounting financial losses.

Former Concert customers have been split between AT&T and BT, based on their location, and the two companies have signed commercial agreements to ensure that customers receive uninterrupted service.

■ **Cable & Wireless** quietly pulled the plug on its application hosting services earlier this year because of a lack of customer interest. The carrier's **a-Services** initiative was launched in September 2000. C&W was charging \$170 per month per user to host Microsoft Office applications on Compaq servers within its Reston, Va., data center.

Ad firm sold on Akamai as net accelerator

More companies turning to CDNs for internal networks as well as Web sites.

■ BY JENNIFER MEARS

NEW YORK — Saatchi & Saatchi is using Akamai Technologies' content delivery network to take its advertising business up a notch, but not in the way network executives might suspect.

There is no Web site being accelerated. The advertising firm is using Akamai as an extension of its internal network, making it easier to share ideas and collaborate on projects even when team members are oceans apart. The approach is a departure from the way companies have typically used Akamai's thousands of edge servers that sit atop hundreds of networks around the world.

"We are all about ideas ... and we have two needs: to share those ideas internally between account teams and to share them externally with our clients," says Laura Limbach, CIO at Saatchi & Saatchi. "And we needed to do that in a very secure, fast way."

Various content included

The advertising firm is using Akamai to speed the delivery of streaming video, PDF files, Microsoft Word documents, Excel spreadsheets and other forms of content that are the building blocks of advertising campaigns for customers such as Toyota, Johnson & Johnson and General Mills.

In the past, Akamai customers primarily accelerated Web site delivery, but now businesses are increasingly turning to Akamai to move "business critical" information, an Akamai spokeswoman says.

Saatchi & Saatchi, of New York, employs about 7,000 workers in 138 offices in 82

countries. Geographic disparity created a challenge to collaborative efforts, Limbach says, so the company set up an internal content-management system called Brain to put all of its creative resources in one secure place. Then came the need to quickly deliver the vast amounts of digital information to employees and clients.

The company considered building its own infrastructure to support the growing amount of digital information it wanted to move, but quickly nixed the idea because of staffing constraints and cost, Limbach says.

Convinced about security

While some corporations might be reluctant to throw their intellectual property onto CDNs, which run over public networks, Limbach says security wasn't an issue. "We believe Akamai's highly secure network meets the highest level of physical, network, software and procedural security," she says.

Limbach wouldn't go into detail about specific security measures in place, but says Saatchi & Saatchi has internal security protocols, including firewalls and application security, that help ensure the integrity of information as it moves from the company's internal systems to the Akamai network.

See Akamai, page 34

Taking the edge off

Advertising firm Saatchi & Saatchi is reaping rewards from using Akamai's network for its internal needs. Here's how:

- Saving on infrastructure; no need to build out more bandwidth or add hardware.
- Saving on IT resources; no need for internal staff to monitor delivery network 24-7.
- Reduced demand on corporate servers; changes to content are done dynamically at the network's edge.
- Employees and clients around the globe have faster access to everything from streaming video to Word documents.

EYE ON THE CARRIERS

Johna Till Johnson



Despite criticism, MPLS is here to stay

the Internet paradigm in two major ways. By supporting tunneling, it breaks the transparency paradigm. By supporting sessions, it breaks the datagram model. Both of these are fundamental architectural principles of the Internet.

The second major objection is that MPLS — like other connection-oriented technologies — doesn't scale infinitely. The Internet already has known scalability issues, which MPLS doesn't solve.

So if one takes a purist, Internet-centric approach, the naysayers are right: MPLS breaks some critical Internet architectural principles, while simultaneously failing to deliver any substantive incremental value, such as improving scalability.

But purists are missing some significant points. Specifically, MPLS was not designed to enhance the 'Net per se. Instead, it provides value to providers of IP and Internet services, including the following:

- By building in support for quality of

service and session-oriented services, MPLS lets providers of IP and Internet services better position those services for end customers, particularly large businesses.

- Additionally, it lets service providers lower operating costs by providing an infrastructure that can consolidate IP, frame, ATM and other Layer 2 services.

- Finally, MPLS IP VPNs set the stage for intercompany IP extranet communications.

On the issue of scalability, MPLS helps in a way that Internet purists might have overlooked. Most Internet purists might think of scalability as the ability to interconnect multiple networks effectively — and they're right, MPLS doesn't help here.

But the Internet has changed considerably over the past two years. Instead of hundreds to thousands of independent ISPs, the majority of 'Net traffic is now handled by a handful of large networks operated by general-purpose service providers (AT&T, WorldCom, British Telecom and others).

Providing a consolidated infrastructure for these large providers (at least in theory) can reduce their network operational and management costs — which represent the largest single component. Anything that reduces these costs helps scalability.

The bottom line is that MPLS might not help the 'Net, but it helps 'Net providers. And that's why it's here to stay.

Johnson is senior vice president and CTO for Greenwich Technology Partners, a network consulting and engineering firm. She can be reached at johna@greenwichtech.com.

■ Soon, enterprise customers and service providers will be able to transport Layer 2 traffic across an MPLS backbone. PAGE 45

Akamai

continued from page 33

Saatchi & Saatchi started down the CDN path in the late 1990s when it decided that its traditional method of using couriers to ship videos between offices and clients was starting to be a drag on business.

"It was an expense in terms of making copies. And it was a time factor in terms of going through couriers and customs, then delivering the tape and having to go to a video room, pop it in a VCR and take a look at it," Limbach says. "The difference between that [method] and for everybody around the globe to be able to look at a video at their desktop within minutes after it's created is quite amazing. It's a true change of business practices."

Saatchi & Saatchi began using streaming media firm Intervu in 1998 and moved to the Akamai service when Akamai acquired Intervu in the spring of 2000. About five months ago, Saatchi & Saatchi began using Akamai to deliver all of its content, not just streaming media, when it switched to the CDN's EdgeSuite service, which delivers not only static content and streaming media, but also dynamic content from the network's edge.

Delivery times slashed

Projects within Saatchi & Saatchi often undergo numerous revisions. With EdgeSuite, changes are inserted into existing pages within Akamai's edge servers and there is no need to return to origin servers every time a tweak is made, shortening delivery time

dramatically, Limbach says.

"A video that would average a 40-second delivery is now being delivered in 6 seconds [with EdgeSuite]," she says.

Limbach says moving to the EdgeSuite service involved changing host and server names and redirecting requests to the EdgeSuite service. "The actual changes that we needed to make were minor and painless," she says. "Very painless, actually."

The only drawback is the cost of EdgeSuite, Limbach says. It's more expensive than the streaming media service Saatchi & Saatchi was using. The EdgeSuite service starts at about \$15,000 per month. However, she says that justifying the additional expense wasn't difficult.

"If we have hundreds of users who are now able to access the content they need faster than they did the day before yesterday, it would be difficult to put a price on that," Limbach says. "It means you're generating ideas and going to market faster than you were the day before yesterday. And that's all in support of our clients." ■



More online!

Read about the state of content delivery networks and their future.

DocFinder: 8836

Q A

Collazo

continued from page 33

What does the typical Infonet customer look like?

Manufacturing makes up about 20% of our customer base. The next-biggest sector is the pharmaceutical industry and then high-tech companies. Our customer is not categorized so much by industry, but by having a large number of locations — more than 40 — spread across 20 countries.

Where does Infonet have its own network assets, and where is it leasing capacity from other providers?

The value of a company is not so much in the infrastructure assets, but in the systems used to run that infrastructure. If you break the network into three layers there is the broadband regional network, the pan-European network and the pan-Asia network. We own most of the latter two networks. Most of our local networks are leased. But we're buying metropolitan fiber rings in larger markets such as New York, London and Paris.

Infonet has deployed Multi-protocol Label Switching (MPLS) to support its IP VPN service. Is Infonet using MPLS to offer other services or to better support traffic engineering?

We run a modern network with an ATM backbone. On a separate plane, we run MPLS primarily to support enterprise customer services. With MPLS in the network we hope to offer more and more IP converged voice, video and data services. We've been offering voice over ATM and over frame for the last five years. We're offering voice over IP now as well. We plan to offer video over IP soon.

Our issue is we need to offer industrial-strength services, which is why voice over frame is more robust for us today. This is basically because voice over IP is barely coming out of pro-

"We're trying to introduce this [VoIP] technology to customers who are expecting highly reliable services, and we cannot afford to sell or install based on hype."

duction shops of hardware vendors like Cisco, which means there are still bugs.

The new-age carriers that deploy new networks don't have any choice but to deploy what they get from the hardware vendors. But then they get into trouble when their networks don't perform because the stuff inside isn't stable. We're trying to introduce this technology to customers who are expecting highly reliable services, and we cannot afford to sell or install based on hype.

What's the future for Infonet? How will the company expand its network and services?

From a network point of view our focus is to increase our national presence in key countries around the world. We plan to continue to grow in the top 25 markets around the world. On the service front we expect to see fully converged voice, video and data services that will also include wireless in three to four years.

Currently Infonet is not offering mobile wireless services, correct?

Yes. But we see a better integration between wireless and global IP networks in the future. Right now next-generation wireless, 2.5G or 3G, is just being rolled out by wireless operators. Once these services are widely available it will be possible to integrate GSM capabilities into IP networks so you can have better integration between wireless devices and global IP networks. ■



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Takes

■ **ONi Systems** last week announced that metropolitan optical systems rival **Nortel** has agreed to dismiss four claims related to purported patent infringement by ONI, but is still pursuing litigation on a fifth claim. Nortel's original suit was filed on March 10, 2000, just prior to ONI's filing for its IPO. The four patents dismissed in the suit pertain to SONET technology that Nortel alleged ONI had infringed on in its dense wavelength division multiplexing systems, an ONI spokesman says. The fifth patent pertains to a technique for passive passthrough of optical signals in a DWDM system, the spokesman says. Since the suit was filed, ONI says it has vigorously countered all of Nortel's claims and will continue to do so with the remaining Nortel patent at issue.

Nortel says it dropped litigation on the four patents to bring the case to an "efficient conclusion." The company says the remaining patent in question continues to reflect the core of its claim.

■ **Tahoe Networks** last week announced a marketing and technology partnership with mediation, service-activation and billing software vendors **Xacct Technologies** and **Kabira Technologies**.

Tahoe plans to integrate both companies' software interfaces into its mobile subscriber aggregation systems. These systems provide mobile access into IP data networks, and support GSM communications, Code Division Multiple Access and public wireless LAN technologies. The combined offerings are intended to let mobile operators combine pre- and postpaid service records, rather than managing them separately. They also are designed to enable accelerated introduction of new, personalized mobile IP data services.

www.tahoenetworks.com;
www.xacct.com; www.kabira.com

Wavelength markets waver

Cost and limited functionality preventing widespread deployment in the MAN.

■ BY TERRI GIMPELSON

Even though demand for metropolitan wavelength service is snowballing, the same cannot be said for wavelength provisioning equipment.

Metropolitan wavelength service revenue will reach \$133 million this year, almost a threefold increase from the \$49 million market for 2001, according to The Yankee Group. Wavelength services will be almost a \$4 billion market by 2005, the research firm forecasts.

In contrast, metropolitan dense wavelength division multiplexing (DWDM) gear used to provision these services to corporations will grow only 2% this year from the \$702 million market in 2001, according to Dell'Oro Group. Capital-expenditure reductions and small buildouts among in-

capacity to 10G bit/sec OC-192.

Wavelength services also offer a means for providers to differentiate themselves based on provisioning times and service quality, analysts say. It can take between 12 to 18 months to acquire and light intercity fiber, The Yankee Group says.

Intercity wavelength service, on the other hand, can be provisioned in as few as 30 days, the firm claims. Service providers also can bundle services on the protocol-independent wavelengths, including applications, content and storage hosting.

Services should be in long-haul market

However, some vendors say wavelength services make more sense in the long-haul market as a wholesale service, especially for those carriers with an installed DWDM system. Furthermore, equipment innovation specific to the metropolitan area has been nearly nonexistent, they say.

That's where Coarse WDM (CWDM) may come in. CWDM is less expensive to deploy than DWDM because it spaces wavelengths farther apart on a fiber, which eliminates the requirement for expensive laser cooling

equipment.

"CWDM makes sense in the metro, and it's less money," says Marian Stasney, senior analyst for The Yankee Group. "It's a niche solution, and it's smart."

Metropolitan DWDM market leader Nortel recently unveiled a CWDM product in an attempt to make wavelengths less costly to provision and available to more companies. The OPTera Metro 5100, a six-slot CWDM version of the 20-slot OPTera 5200 metropolitan core DWDM system, is being prepped to bring wavelength services to the forefront.

But CWDM is not a panacea to spurring sales of wavelength provisioning equipment. While nearly all equipment available today lets carriers add wavelengths on demand, only few

Wavelength services will be almost a \$4 billion market by 2005, The Yankee Group forecasts.

let them add and drop a single wavelength at a time.

Those devices that support optical add/drop multiplexing only support the addition or subtraction of three to eight wavelengths at a time, which is inefficient, says Michael Howard, principal analyst and co-founder of Infonetics Research.

"The way a wavelength is provisioned today is nothing dynamic," he says. "They assign a wavelength and provision it all the way through, end to end, the same way they would a private line."

Adding add/drop capabilities to wavelength provisioning gear will let service providers — and perhaps equipment vendors — gain additional revenue by quickly, efficiently and remotely provisioning wavelengths along a route, Howard says.

But metropolitan equipment vendors are still a bit muddled on product positioning, according to The Yankee Group's Stasney. This uncertainty will only serve to confuse carriers interested in offering these services, she says.

"It's a lose-lose situation for both sides," Stasney says.

As a result — and with market conditions forcing a consolidation among equipment vendors and service providers — companies will not see the emergence of inexpensive wavelength services for some time.

"It's still a little early to predict who the survivors will be in this particular market," Stasney says.

As for equipment, "Sales will increase a little next year," Howard says. "There are still a number of issues surrounding wavelength services that need to be resolved, including equipment design and standards." ■

The cost of rising the wavelength

Prices for optical bandwidth in metropolitan-area network (MAN) and long-haul:

	MAN		Long-haul	
	2.5G bits	10G bits	2.5G bits	10G bits
High	\$24,576	\$58,368	\$67,000	\$75,000
Low	\$10,000	\$20,000	\$25,000	\$68,000

SOURCE: THE YANKEE GROUP

cumbent local exchange carriers and postal, telegraph and telephone administrations are crimping growth, Dell'Oro analysts say.

Metropolitan DWDM vendors say current economic conditions make it too costly for service providers to build out wavelength service networks. Yet demand ultimately may fire up the equipment market.

According to The Yankee Group, wavelength services — in their most basic form as an unprotected transport service — are about 30% to 60% less expensive than comparable lit bandwidth services. Companies are looking to these services to increase their current bandwidth, particularly for storage applications, videoconferencing and large file transfers, and to connect branch offices, the firm says.

Meanwhile, service providers are looking to wavelengths for trunking services between metropolitan facilities. Wavelength services offer providers a means of quickly increasing their current 2.5G bit/sec OC-48



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Technology Update

■ AN INSIDE LOOK AT THE TECHNOLOGIES AND STANDARDS SHAPING YOUR NETWORK

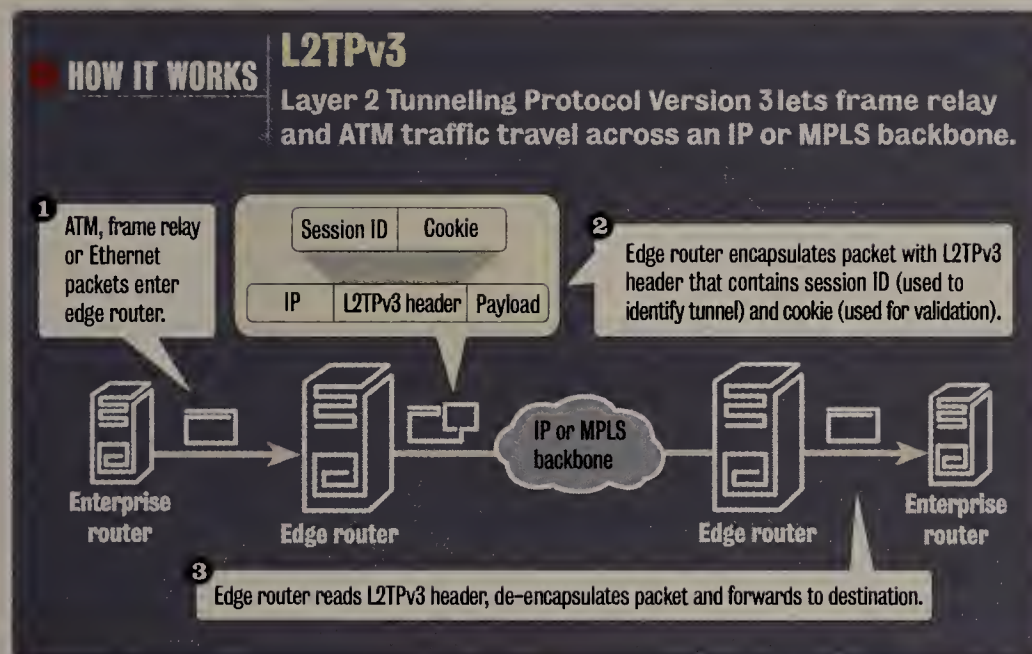
Light at the end of the L2TPv3 tunnel

■ BY DAVE GINSBURG

Companies and carriers have been looking for ways to maximize the efficiency and cost of their infrastructures and simplify management by transporting multiple Layer 2 services across a common IP backbone. Unlike IP-based VPNs, Layer 2 VPNs are multiprotocol, allowing the transport of IP and non-IP traffic across a common router infrastructure. With Layer 2 VPNs, complexity is reduced by eliminating the need for edge routers to support every enterprise VPN routing table and Layer 3 routing environment.

Several Layer 2 VPN techniques, such as the IETF Martini draft and Circuit Cross Connect, have been developed to let packet-switched traffic, such as frame relay, ATM and Ethernet, and time-division multiplexed traffic, such as voice and leased line, be transported across a Multiprotocol Label Switching (MPLS)-enabled network.

Another technology being developed within the IETF is the Layer 2 Tunneling Protocol Version 3 (L2TPv3). Currently an IETF draft on the standards track, L2TPv3 is emerging as a lightweight yet robust alternative to creating Layer 2 VPNs across



MPLS and pure IP backbones.

L2TPv3, an extension of the L2TP, is a stateless protocol with no inherent signaling or keep-alive mechanism. L2TP, originally defined in RFC 2661, was designed to provide dynamic tunneling for multiple Layer 2 circuits across packet-oriented data networks. It describes a standard method of tunneling that lets circuitlike connections across one or many Layer 3 networks appear as point-to-point or point-to-multipoint links between customer locations. The base L2TP protocol consists of a control protocol for dynamic creation, maintenance and tear-down of L2TP sessions; and data encapsulation to multiplex and demultiplex Layer 2 datastreams between IP-connected nodes.

L2TP has been focused on narrowband dial-up protocols. L2TPv3 extends L2TP by

letting it run on higher-speed devices such as routers because of reduced overhead and the related decrease in processing chores. It also adds important new features such as increasing the session and tunnel ID space from 16 to 32 bits, which dramatically increases the number of tunnels from 65,000 to more than 4 billion.

With L2TPv3, the physical interface connecting to a customer's network becomes the tunnel ingress/egress interface. Consequently, traffic does not need to be routed into the tunnel by the provider's router. As packets arrive at the interface, they are encapsulated and forwarded directly toward the remote tunnel endpoint. Once received and de-encapsulated, the original packet can be forwarded out of the egress interface if the tunnel identifier is recognized by

the router. If it isn't, the packet is discarded.

With L2TPv3, companies reap lower-cost services because carriers can offer frame relay, ATM and Ethernet over a common IP backbone — radically lowering capital and operational costs. And because L2TPv3 adds no new requirements to the IP transport infrastructure, it is inherently easier and simpler to implement and support, because network staff is familiar with IP.

Driving the technology are a number of new applications, such as the ability to offer transparent Ethernet LAN services across the wide area, scaling frame relay networks to higher speeds, and infrastructure optimization by collapsing multiple networks onto one IP backbone.

Meanwhile, corporations have a single connection that provides a secure Layer 2 VPN to remote sites and general Internet access, as opposed to different connections for multiple services, such as a connection for Internet access and discrete private lines for intranet access — a common enterprise problem.

But there is always a downside. While L2TPv3 makes better use of a shared resource (the Internet and IP backbones), resource sharing is always a compromise and lacks true predictability and guarantees. This is not only true of logical circuits but also of physical assets such as routers where schemes such as virtual routing have been proposed.

Ginsburg is vice president of marketing and product management at Allegro Networks. He can be reached at gins@allegro-networks.com.

Got great ideas

■ *Network World* is looking for great ideas for future Tech Updates. If you've got one and want to contribute it to a future issue, contact Features Editor Neal Weinberg (nweinberg@nww.com).

Ask Dr. Internet

By Steve Blass

Thanks for last week's advice on hotel Internet systems. However, the system we saw doesn't force you to use Dynamic Host Configuration Protocol. It works no matter what TCP/IP settings you have. It seems to have something that "talks" to the media access control address on the LAN card, and doesn't even deal with TCP/IP settings. We just don't know how it does it. Do you have any ideas?

IP packets are delivered in Ethernet frames on Ethernet LANs. The IP-address-to-MAC-address translation list is kept in an Address Resolution Protocol (ARP) cache on each Ethernet station. A router programmed to provide DHCP services plus proxy-ARP services for every request it hears might suffice in a twisted, but deceptively cool, sort of way. IP clients communicate through the Ethernet stack, which asks, "What MAC address should I use?" If the hotel gateway

responds with its own MAC address, then the hotel gateway and the client are connected and you're all set. That's one way. The "Proxy ARP with Subnetting" how-to at www.linuxdoc.org/HOWTO/mini/Proxy-ARP-Subnet/ describes the actual implementation.

Blass is a network architect at Change@Work in Houston. He can be reached at dr.internet@changeatwork.com.

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Scheming schemas

hard to learn as Urdu or Sanskrit, is nevertheless something one would rather avoid. The alternative to using a DTD is to use an XSD.

XSDs are much easier to understand than DTDs because they are written in XML. Better still, XSDs are better than DTDs at characterizing how the content of an XML file is structured.

Now to really explain the ins and outs of XSD would require this column to be approximately 428.97 feet long. We're just going to hit the highlights.

XSDs are structured like any other XML document and properly include a namespace declaration following the XML declaration:

```
<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema xmlns:xsd=http://www.
w3c.org/2000/10/XMLSchema>
[[ XSD stuff ]]
</xsd:schema>
```

So far, so simple — it's that bit in the middle that gets complex. The "XSD stuff" is all about defining the elements that we're going to use in our XML document. These definitions are created by declaring the elements and which data types they use.

There are two data types: Primitive (or base) types and derived types. Derived types are defined by combining two or more data types (either primitive or de-

rived types) to create compound data types.

Primitive data

There are nine primitive data types, including Boolean (true | false), decimal, uriReference and string. These types can be further refined by attributes that restrict the data type's value range or enumerate the allowable values of the data type.

For example, we can set upper and lower limits on the number of characters in a string:

```
<simpleType name="password">
  <restriction base="string">
    <minLength>5</minLength>
    <maxLength>25</maxLength>
  </restriction>
</simpleType>
```

Here's another definition, but this time we're enumerating the allowable values that an element can be assigned:

```
<simpleType name="accountType">
  <restriction base="string">
    <enumeration>user</
enumeration>
    <enumeration>manager</
enumeration>
    <enumeration>administrator</
enumeration>
    <enumeration>operator</
```

```
enumeration>
```

```
</restriction>
```

```
</simpleType>
```

An example of a derived data type is "integer," which you would get by restricting the base type "decimal" to zero decimal places. If you want to use a long integer, you now could derive this from "integer" by setting the restriction that the value must be no less than $-(2^{63})-1$ and no greater than 2^{63} . So the following two XSD definitions define the "integer" and "long" data types:

```
<simpleType name="integer">
  <restriction base="decimal">
    <scale>0</scale>
  </restriction>
</simpleType>
```

```
<simpleType name="long">
  <restriction base="integer">
```

```
    <minInclusive>
-9223372036854775807</minInclusive>
```

```
    <maxInclusive>
9223372036854775808</maxInclusive>
```

```
</restriction>
```

```
</simpleType>
```

Pretty cool, huh? You wait, next week it will get interesting...

Derive your comments to gearhead@gibbs.com.

Easier than DTD

As we noted last week, the most common technology used to define the structure of an XML document has been Document Type Definitions (DTD). Among the deficiencies of DTDs is that they are written in their own language, which, while not as



Cool Tools

Quick takes
on high-tech toys
By Keith Shaw

The latest from the Cool Tools lab

We've been piling up some goodies in the Cool Tools test lab; here's an overview of some we've recently had some fun with:

Sprint/Samsung a400 phone

One of the latest offerings from Samsung that works on the Sprint wireless network is the a400, a clamshell-type phone that is still small enough to fit inside the palm of your hand.

New features include embedded Global Positioning System technology that gives access to location-based and E-911 services as the networks make them available; personal information manager functionality that lets you take your address book and calendar with you; OpenWave's Mobile Browser 4.1 for Internet access; and 23 ring tones and a silent vibrate mode. The a400 costs \$200.

The phone also supports the SprintPCS Ringers and More program, which lets you download personal ringers and images. The green-backlit display has six lines of text with four-shade grayscale for images. Other features include voice dialing, a bilingual user interface and four built-in games. Go to www.sprintpcs.com to check out the phone or to www.samsungelectronics.com.



Road Tools' CoolPads

These pads fit underneath your laptop to allow for better heat dissipation, but also give you a better angle for ergonomic benefits when working on different height surfaces (such as your kitchen table). We tested two versions, the \$30 Podium version and the \$20 Traveler version.

The Podium version has some cool adjustable height risers with rubber tips, which you can stack and unstack like Legos to give you the correct angle. The solid base can also rotate if you want to show others your screen, and the base does a good job of protecting furniture.

For road warriors, Traveler CoolPad doesn't have the risers, but the solid base sticks well to airline tray tables. It's also lighter than the Podium version — (9 oz. for the Traveler, 15 oz. for the Podium) — which makes it an easy addition to your laptop bag.

You can check out these low-tech yet still cool tools at www.roadtools.com.

Pockey portable hard drive

From our friends at TechnoScout.com comes the Pockey portable hard drive, which can hold 20G, 30G or 40G bytes of data and fits in the palm of your hand. The power is drawn off the Universal Serial Bus (USB) cable, so carrying the cable and hard drive is all you need to bring all of your files with you. The installation was a little rough compared with some other USB-related hard drive devices that

were literally "plug and play," but after we configured the proper drivers it got up and running pretty

All you need is a USB cable to access 20G, 30G or 40G bytes of data on a Pockey portable hard drive.

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quickly.

You can check out the drives at www.pockeydrives.com or order directly through www.technoscout.com. The 20G-byte version we tested costs \$250.

Vox Proxy

Adding animation to PowerPoint presentations can be a double-edged sword. Bad animation usually makes bad presentations even worse. Still, if you fancy yourself a creative type, you should check out Vox Proxy, which adds talking animated characters to PowerPoint. With the software, you can have animated characters speak your presentation, and you also can add your own voice and have the animation follow along. The software includes many wizards and tutorials to get you started and make you dangerous. Still, be prepared to devote some time to the software to make your presentations good enough that people won't think of the animations as just window dressing.

You can check out the software at www.voxproxy.com, where you can get a free 30-day trial. The software costs between \$200 and \$250.

Shaw can be reached at kshaw@nww.com.

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Log in at noon ET, Wednesday, April 17th for this illuminating hour-long Tolly Group Webcast.

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EDITORIAL

John Gallant

A Showdown of broadband proportions

Normally, this space is reserved for the opinions of Editor in Chief John Dix. But lately, it's been more like the community calendar. That's because we've got so many special events planned for you, including the security session at NetWorld+Interop Las Vegas that I wrote about last week. (For more information, go to www.interop.com, click on the Las Vegas 2002 show and hit keynotes.)

In addition, John Dix this week is hosting his Voice-over-IP Showdown at the Spring Voice on the Net conference in Seattle (www.von.com/vonspr02/). If you're there, be sure to attend. If not, check out our coverage after the event.

But we have even more in store.

At Supercomm this June in Atlanta, I'm hosting *Network World's* Broadband Showdown — and I'm challenging the leading providers of broadband access to debate one another on technology and strategy.

The goal of the Showdown is to give businesses a chance to hear from providers of cable modem service, DSL, fixed wireless and satellite access — all the major broadband purveyors. I want to explore not only the strengths and weaknesses of the services they offer, but also find out more about deployment plans, management strategies and the value-add services they plan to offer over these access pipes. I want to know how these companies serve geographically dispersed businesses, how their pricing stacks up and what kind of support they provide to help you bring offices and teleworkers into the corporate network.

The Showdown will be held on Wednesday, June 5, and Amy Harris, program manager for broadband markets and technologies at IDC, will join me. In a true presidential-debate-style format, Amy and I will hit the providers with tough questions. Then we'll let the vendors ask each other questions, which is always fun.

For cable, I'm challenging AOL Time Warner — the current market leader — to send a top technical executive. For DSL, I'm looking for SBC Communications to go to bat. For satellite, I want DIRECTV Broadband.

For fixed wireless ... well, I'm up in the air, no pun intended. This is a fractured market where companies that once looked like major contenders have backed off of late. I'm not sure who should play, and I want to hear from you and from the providers about which company should join us.

So AOL Time Warner, SBC, DIRECTV ... are you up for the challenge? Will you join the showdown? And who will stand up for fixed wireless?

— John Gallant
Editorial director
jgallant@nww.com

Lloyd epilogue

Regarding "Net saboteur faces 41 months" (www.nwfusion.com, DocFinder: 8824): When Timothy Lloyd sank Omega Engineering, he brought to light the need for greater data security and the fact that management frequently does not understand the IT function or the technology they utilize. Lack of a good grasp of IT know-how allowed one person to hijack Omega's data and livelihood.

Management needs to make the time to understand how their network operates and ask questions. IT is the engine of most companies today; what are you doing to ensure your engine is up and running and in safe hands?

What Lloyd did was wrong and selfish. He will regret his actions for the rest of his days. But I wonder what his side of the story is.

I also wonder if the stuffed shirts in the Omega boardroom learned anything from this experience. Anyone who can wipe out a company in eight keystrokes should be treated like gold.

Jason Klein
Shelton, Conn.

With one person doing all the server, network and back-up administration, even an off-site back-up storage arrangement can be sabotaged. Perhaps the lesson from Omega's situation is that checks and balances should be included in a disaster-recovery policy.

Rob Ellis
Boulder, Colo.

Change is painful

Regarding Lisa Pierce's column "Mediaone.net domain name change: A warning" (www.nwfusion.com, DocFinder: 8825): I have been a MediaOne subscriber for almost six years. I can't imagine how

E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.

opinions!

many people have my MediaOne e-mail address. I average 150 e-mails per day. A lot are from mailing lists to which I subscribe. After six years, it would be one big pain in the butt to change my e-mail address in every account where I might have entered it.

But as bad as that is, the biggest pain is the fact that when I'm not sitting at home, which is most of the time, I can't receive my e-mail from my e-mail client. Using the Web browser, I can read mail, but when I try to send replies I get a system error message. I don't care about them not providing a dial-in number, but not being able to access my e-mail from my e-mail client is a deal breaker. I will switch just for that reason. At least I'm lucky — I have a choice of three broadband providers.

Henry Zannini
Salem, N.H.

Too smart?

I enjoyed your story on nanotechnology ("Nano futures," www.nwfusion.com, DocFinder: 8826) and agree that this is pretty cool stuff. The only problem I have with this new technology is that when nanomachines are given the ability for self assembly, and the ability to adapt, it would be far too easy for them to disassemble everything on the planet, including us. R. Stanley Williams, Hewlett-Packard Labs fellow and director of Quantum Science Research, says nanomachines won't take over the world and kill us all; they will have safety mechanisms built into them. But if they have the capacity to evolve their code, then they will have the ability to change and throw out old rules by default.

This is a worrisome scientific development, and I hope that these scientists realize what they are building. If these "smart" molecules develop beyond our control, what will stop them?

Jonathan Dunn
Assistant account executive
NYPR
New York



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BOTTOM LINE

Joel Snyder

Everything you need to know about IDSes

I've spent the past few months immersed in intrusion-detection systems and have learned more than I really wanted to know about them. In case you're wondering if you need an IDS, here are some points to keep in mind:

- **An IDS is only as good as its configuration.**

In order to tell whether something is amiss, an IDS needs to know everything about your network. For example, if you have Web servers running on Port 80 and Port 8008 on your network, you'd better tell your IDS, or it's not going to look in the right places. IDSes need to know not only where the server is running, but also which software it's running and even which version, in some cases. IDSes behave very differently if you're running Microsoft's Internet Information Server than Netscape's server. Be prepared to perform a thorough audit of your network before you turn the IDS on.

- **IDSes are dumb.** You have to tell them everything or you'll be supersaturated with false positive alerts. Even if you do tell them everything, you'll still find IDSes are always one step or two behind the latest attack. IDS products on the market don't use artificial intelligence or neural networks; they look for patterns that match known problems. If any of the popular attacks is changed by a single octet, the IDS may be unable to detect it. Make sure your IDS vendor has a plan for keeping your attack signatures updated constantly.

- **You need to know a lot of details.** When evaluating IDSes, you need to know the different ways in which they operate. Stateful matching, context matching, protocol anomaly, pattern searching — all these terms have to be second nature when you're selecting a product. And not all IDSes perform the same function to the same level of detail. If you haven't learned the ins and outs of TCP/IP yet, be ready for a new education.

- **Be prepared to spend a lot of time — and money.** Whether you purchase a fully configured IDS or roll out your own with the free-ware Snort, be prepared to spend time and money getting the IDS configured and installed. IDSes also take a lot of time to manage and administer on a daily basis. Every IDS vendor seeks to reduce false positive reports, but you're going to go through a lot of them before you get your IDS tuned.

- **The PR wars are in full swing.** Even though the product niche is small and relatively new, products are already suffering from feature-creep. Even features that look useful at first, such as active attack evasion, seem less than perfect when you examine them closely. Be sure to evaluate the risks and rewards of some of these newer features.

Don't get me wrong — IDS products have a definite place in corporate networks. Just don't expect them to be easy.

Snyder, a Network World Test Alliance partner, is a senior partner at Opus One in Tucson, Ariz. He can be reached at Joel.Snyder@opus1.com.

Even features that look useful at first . . . seem less than perfect when you examine them closely.



YANKEE INGENUITY

Howard Anderson

Needed: Networks with built-in security

One recurring question I am asked is, "OK, I understand that the communications industry and its traditional suppliers are toast. What's next?" It's true that the overbuilding of the competitive local exchange carriers and the "creative accounting" at Global Crossing, and perhaps Qwest

Communications and WorldCom, have cast a pall on parts of the industry. But it's not true that the entire industry is in the sewer.

Years ago I was at Nortel presenting my analysis to their top-400 executives and was asked about the falling market for enterprise-level customer premises equipment (CPE), an area that Nortel claimed to dominate. "What about Cisco?" I replied. "Aren't routers communications equipment that is owned by enterprises?" To Nortel, the answer (then) was "No." They had defined the market too narrowly — just PBXs and call centers.

A few months ago, I did the keynote speech at Check Point Software's users meeting. Check Point is the single biggest mistake in my venture career. I had the opportunity to invest in it in 1994, when sales were \$2 million. Last year Check Point earned \$322 million on \$528 million in sales. Most high-tech companies may make 5% to 10% profit; here is a company earning 60%.

What I found at the Check Point users meeting were all my old enterprise CPE users — who were now building firewall protection for their Fortune 500 companies, a market that Check Point dominates. Firewalls let companies protect their networks from outside attacks and inside snooping — and everyone needs one. The corporate network goes far beyond a company's buildings — it extends to everyone who works at home. Right now there are 28 million telecommuters in the U.S. There are 15 million people who subscribe worldwide to high-speed Internet service, 10 million of whom are in the U.S. Check Point owns about 25% of the firewall market, but there is a bigger opportunity out there: public firewalled networks.

What we have are enterprise solutions — Cisco or RSA Security or McAfee will sell you some software or a black box. But what the mar-

ket really needs isn't a lot of expensive hardware at the customer site, but rather a network that has this capability built in.

In a previous column, I wrote about 802.11, or Wi-Fi, and its ability to provide inexpensive network access. The downside is that Wi-Fi is porous to cyberattacks. The industry solution is to sell lots of \$300 CPE boxes to workers at home to protect their network.

We have seen this before: lots of equipment at the premises that does the work the network should have done. But what companies want is that same kind of firewall service inside the network — or a specially designed and built network that has all that functionality. Actually, they want both — to buy a carrier service that gives them that protection, or a CPE option.

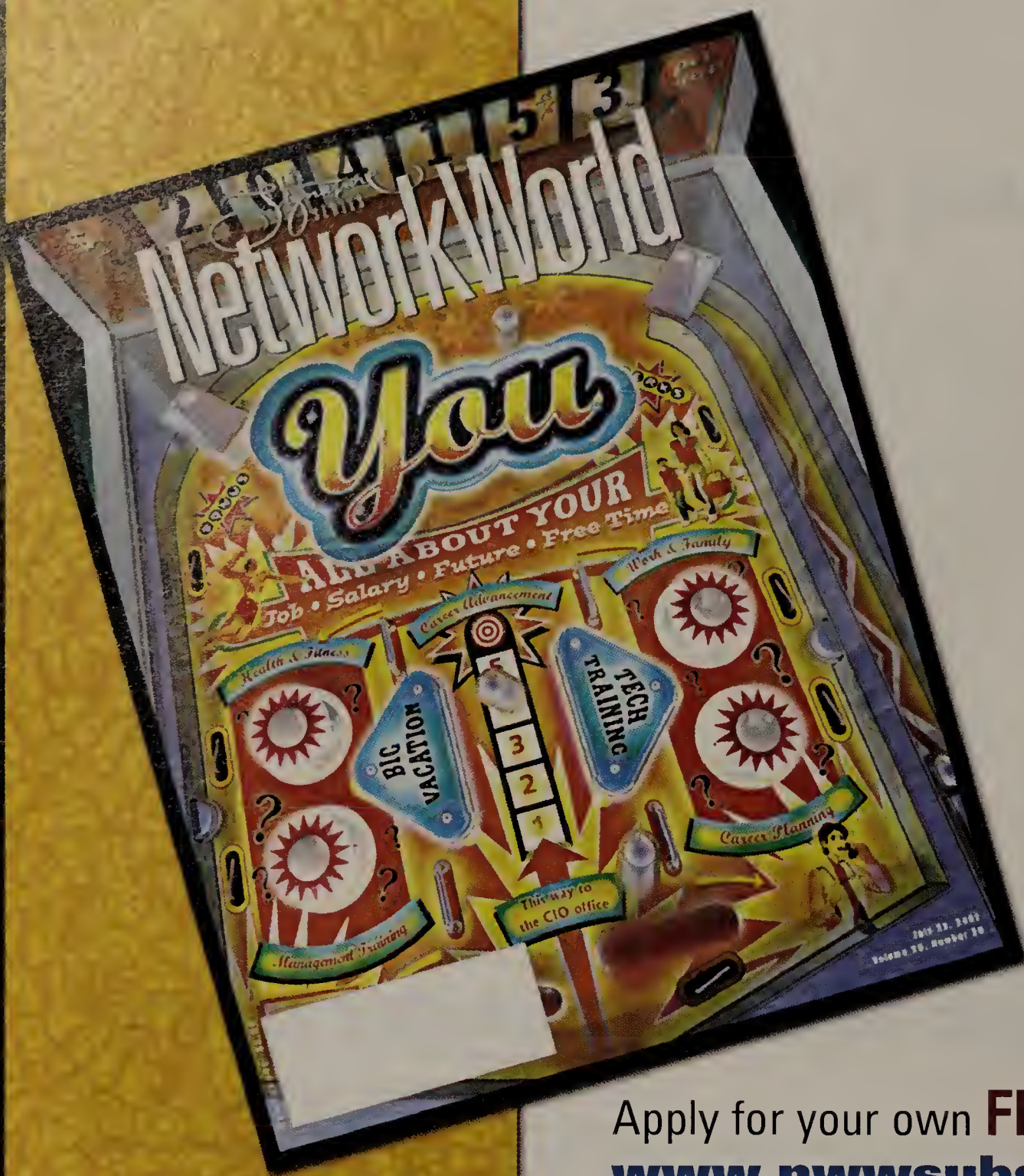
The result may be the same old network that has a new life, or a completely new network that has a different price and feature set. Either way, those who define networks too narrowly will continue to find commodity pricing, creative accounting and negative growth. Same clowns, different circus.

Many companies buy a few hundred firewall boxes for their key employees, but what happens when 10,000 employees require protection? Are companies going to spend \$3 million, or are they going to go to their carriers and demand a service that provides that protection?

The key for the communications industry is to develop a suite of services that are definitely not commodities. As long as there is excess capacity, some fool will drop the price. On the voice side, we have seen distinctive services such as caller ID and 800 services. On the data side, the killer app is going to be industrial-strength, ruggedized, secure services. This market is the province of the box vendors and the software jocks. But tomorrow it's going to be a network service, and for my money, it can't come too soon.

Anderson is senior managing director of YankeeTek Ventures, a Cambridge, Mass., venture capital fund for early-stage technology companies. He also is founder of The Yankee Group and the William Porter Distinguished Lecturer at the Massachusetts Institute of Technology. He can be reached at handerson@yankeetek.com.

It's not true that the entire [communications] industry is in the sewer.



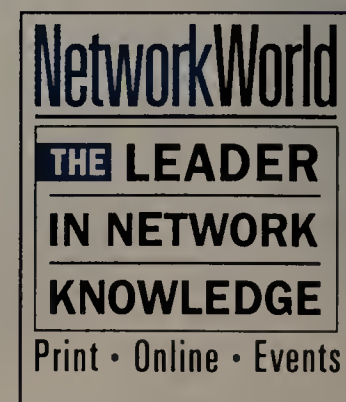
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VPN Update

A look at the latest developments in IPsec and MPLS-based VPNs.

Variations on a VPN theme

■ IRWIN LAZAR

A new breed of VPN based on Multi-protocol Label Switching is emerging as an alternative to traditional VPNs based on IP Security. To further complicate the issue, MPLS-based VPNs come in two flavors: Layer 2 and Layer 3.

So what are the differences between the various types of VPNs, and what's the best choice for your network?

Service providers typically offer two VPN alternatives to traditional WAN offerings such as frame relay, ATM or leased line: IPsec-encrypted tunnel VPNs and MPLS VPNs.

The IPsec option

IPsec tunnel-based VPNs are sometimes referred to as client-premises equipment-based VPNs because the service provider typically places equipment at the client site.

This device handles encryption and decryption of traffic before it goes out over the service providers' network. Traffic within the service provider network is routed the same as any other IP traffic, and the service provider has no visibility into the IP tunnel. Nor does the service provider network need to be configured in any special manner to support IPsec VPNs.

Prediction: In the long term, IP VPNs will replace traditional Layer 2 services such as frame relay, ATM and leased lines.

Because traffic in an IPsec-based VPN is encrypted, it is generally considered secure to use IPsec to transport sensitive traffic over a public IP network.

Deployment dilemma

You have two choices when deploying IPsec VPNs: managed vs. roll-your-own. With a managed VPN, one service provider deploys and manages customer client-premise equipment, and all traffic is carried over that provider's network. This lets the provider offer service-level guarantees for assured performance.

In a roll-your-own scenario, the company deploys its own VPN devices and does not necessarily rely on a single service provider. Roll-your-own approaches are recommended for connecting branch offices that only have one Internet connection.

The disadvantages to roll-your-own are that the company is responsible for managing VPN configurations, and because traffic is transversing the Internet, there are no performance guarantees. Moreover, it typically is difficult to support latency-sensitive traffic,

such as voice.

However, a roll-your-own approach lets corporations establish a VPN to any site that has access to the Internet.

Because IPsec requires each end of the tunnel to have a unique address, special care must be taken when implementing IPsec VPNs in environments using private IP addressing based on network address translation. Fortunately, several vendors offer solutions to this problem. However, they add more management complexity.

The MPLS method

MPLS-based VPNs come in two classes: Layer 2 and Layer 3. Layer 2 VPNs based on the Internet Engineering Task Force's (IETF) Martini draft or Kompella draft simply emulate Layer 2 services such as frame relay, ATM or Ethernet.

Typically, Layer 2 MPLS VPNs are invisible to the end user, much in the same way the underlying ATM infrastructure is invisible to frame relay users. The customer is still buying frame relay or ATM, regardless of how the provider provisions the service.

With Layer 3 MPLS VPNs (also known as "IP-enabled" or "Private-IP" VPNs), service providers assign labels to IP traffic flows. These labels represent unique identifiers and allow for the creation of virtual IP circuits or Label Switched Paths (LSP) within an IP network.

By using labels, a service provider can create closed paths that are isolated from other traffic within the service provider's network, providing the same level of security as other private virtual circuit (PVC)-style services such as frame relay or ATM.

Because MPLS VPNs require the service provider to modify its network, they are considered network-based VPNs. MPLS-based VPNs require no client devices, and tunnels usually terminate at the service provider edge-router.

Layer 3 VPNs offer significant advantages to traditional Layer 2 services. Because they rely on IP routing to build paths, they easily can be used to create fully or partially meshed networks within a service provider cloud, with only one entry point into the cloud from each location. This eliminates the problem of setting up and managing multiple PVCs that plague fully or partially meshed networks created with ATM or frame relay. The IETF has defined standards that let MPLS VPNs support Differentiated Services, which let providers enable prioritization of voice and/or other latency-sensitive traffic.

Providers also can use MPLS to perform traffic engineering, which can provide predictable performance characteristics for individual classes of traffic.

Lazar is a senior consultant for Burton Group, where he focuses on strategic planning and network architecture for Fortune 500 companies and large service providers. He can be reached at ilazar@burtongroup.com.



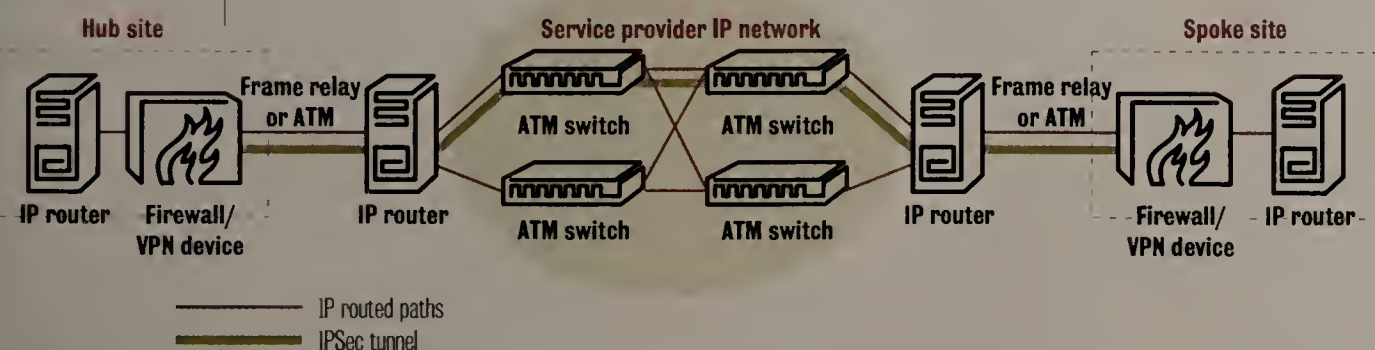
Action items

1 If you are using frame relay or ATM, and you need to incorporate meshing, you generally can do so at a lower cost with MPLS-based VPNs, assuming you can get connectivity from one provider to all your locations. Otherwise, MPLS VPNs may not offer any advantage to your current service.

2 For small remote sites with high Layer 2 service costs (such as international locations), or sites with strong security requirements, IPsec VPNs are an ideal way to provide connectivity, although there are generally no performance guarantees unless all traffic is carried by a single provider.

IPsec VPN

Encrypted IPsec tunnel originates and terminates at customer site.



The promised LAN

VPN Update
A look at the latest developments in IPSec and MPLS-based VPNs.

MPLS Layer 2 VPNs hold promise for global LAN extension.

■ BY MARY PETROSKY

If you operate a private ATM campus network or metropolitan-area network, a Multi-protocol Label Switch Layer 2 VPN could be a cost-effective, high-speed alternative.

If you're buying frame relay or ATM from a service provider, in the next year to 18 months you may see lower-cost Ethernet-based offerings built on MPLS Layer 2 VPN technology.

And service providers are expected to leverage the transparent connectivity of MPLS Layer 2 VPNs to offer features such as remote-server management, off-site storage and even voice over IP.

All this is being made possible because the Internet Engineering Task Force (IETF), through its Provider Provisioned VPN (PPVPN) and Pseudo-Wire Emulation Edge to Edge (PWE3) working groups, has focused on defining standards that leverage MPLS for creating VPNs.

In particular, a set of documents known as the Martini drafts has won the support of nearly a dozen vendors and piqued serious interest among several service providers, including Level 3 Communications, Cable & Wireless, IntelliSpace and Telseon.

Although no standards have yet been defined by the working groups, many vendors have already implemented the Martini drafts, with additional implementations in the works. Cisco, Extreme Networks and Riverstone Networks announced support for Ethernet-based MPLS Layer 2 VPNs last spring. Last fall at NetWorld+Interop, Foundry Networks and Laurel Networks joined in and participated with Cisco, Extreme and Riverstone in interoperability testing of Ethernet across an MPLS network compliant with Martini encapsulation.

Atrica, Juniper Networks, Nortel Networks, TiMetra and Tenor Networks are among the other vendors also tracking Martini and related drafts. All plan to roll out implementations in the first half of this year. While initial announcements have centered on Ethernet, there also is broad support among

vendors for ATM and frame relay encapsulations.

Soon, enterprise customers and service providers will be able to transport a range of Layer 2 traffic types across an MPLS backbone, opening the door for a variety of applications and services.

The enterprise play

Financial services firms, universities and government agencies in particular are expressing interest in MPLS VPNs as a way of upgrading their private ATM-based campus and MANs.

These organizations are looking to Ethernet for the bandwidth they need to scale their current campus and MANs, but are reluctant to give up the bandwidth management, quality of service (QoS) and reliability aspects of ATM. By deploying Ethernet over an MPLS infrastructure, they can get many of the characteristics of ATM — including traffic management, fast failover and QoS — on lower cost, higher performance equipment.

MPLS Layer 2 VPN technology is appealing because it lets companies extend

See LANs, page 48

VPN vs VPN

Layer 3 MPLS VPNs	Layer 2 MPLS VPNs
Network-based VPN (RFC 2547)	Network-based VPN
L3 managed by service provider.	L2 managed by service provider, L3 managed by customer.
Service provider has visibility into customer routing, though customer can use either globally unique or private addressing (at some burden to service provider).	Customer routing remains private; private addressing can be used.
Limited to IP.	L3 agnostic; can accommodate non-IP protocols.
Independent of underlying L2 technology.	Dependent on underlying L2 technology.



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LANs Continued from page 46

LANs beyond a building without having to set filters on routers or configure LAN emulation over ATM, says Sam Halabi, vice president of architecture at Extreme.

On the service side

Telseon, IntelliSpace and others offer Ethernet-based MAN services, but several factors have limited the success of these services, including a lack of geographic reach. Metropolitan Ethernet also has been limited to service providers with optical infrastructures, says Azhar Sayeed, IP MPLS Manager in Cisco's IOS Technologies Division. MPLS Layer 2 VPN technologies based on the Martini approach addresses these issues.

Using Martini technology, anyone with a routed infrastructure can offer Ethernet services. The same goes for frame relay and ATM. Service providers focused on IP could add frame relay and ATM simply by modifying the edge of their networks, where the Martini-style encapsulation takes place, and turning on MPLS in their network core, if they haven't done so already.

Level 3 and the U.K.'s Storm Telecommunications are solving the "reach" problem by offering international

Ethernet LAN extension services based on Martini technology. In January, Level 3 began commercial deployment of Ethernet over MPLS services based on the Martini drafts. The company's large-enterprise customers can use the service to connect 802.1Q virtual LANs (VLAN) across a wide area, initially encompassing the U.S. and Europe. Likewise, Level 3 service provider customers, such as Yipes, can use it to offer expanded Ethernet coverage to their end customers.

Level 3's services support multiple VLANs per customer Ethernet port connected, letting multiple point-to-point virtual circuits be established over the same port. Level 3 is offering service-level agreements for the service based on availability, latency and packet delivery.

Pricing, in the form of monthly recurring charges, is based on a combination of port and VLAN charges and aggregate usage. In early spring, Level 3 expects to expand its MPLS Layer 2 VPN support to encompass ATM and frame relay.

Last fall, Storm announced its International Ethernet Service. Based on the Martini drafts, the service was initially rolled out in Europe, with a connection to New York due to go online early this year. Storm is offering customers bandwidth in 1M-bit/sec increments and what it calls premium service guarantees (including 99.99% availability and round-trip times between the U.S. and Europe of less than 80 msec).

On the MAN front, Telseon sees MPLS Layer 2 VPN technology enabling its customers to more seamlessly connect their LANs. Currently, Telseon restricts customer use of Ethernet media access control addresses and VLAN tags to avoid conflicts with its internal network operations. However, by using the Martini approach, Telseon will be able to fully encapsulate customer traffic,

eliminating the need for such restrictions.

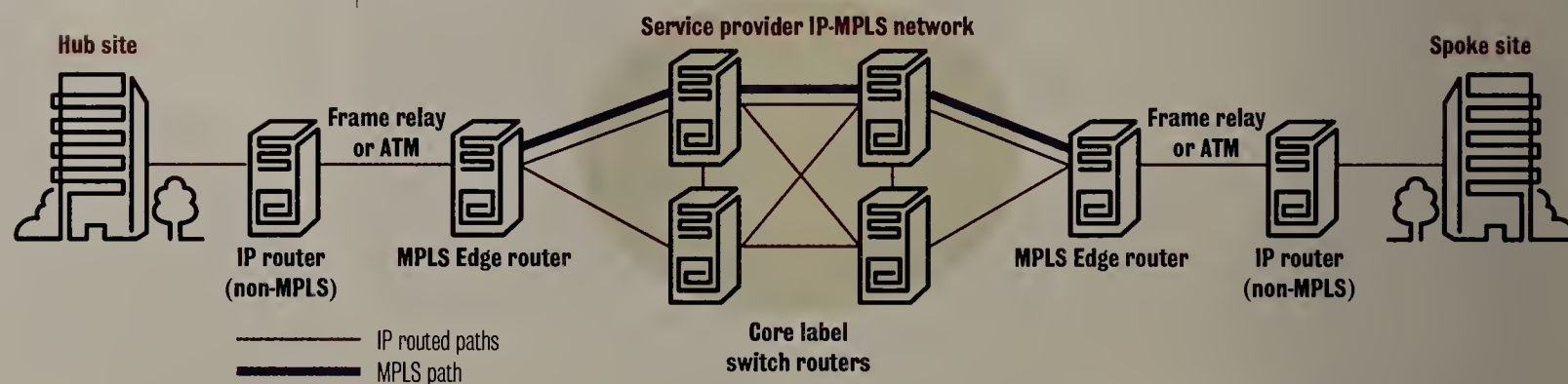
Telseon and IntelliSpace see opportunities for expanded services offerings based on MPLS Layer 2 VPNs. With a fully transparent service such as the Martini approach allows, service providers can offer storage services and server management that appear as an extension to the customer's network. MPLS Layer 2 VPNs also let metropolitan providers ensure the strict QoS guarantees needed to support applications such as VoIP especially in converged infrastructures, says Carlo Lalomia, IntelliSpace's co-founder and CTO.

For enterprise customers, using such services should require little — if any — change at their premise. The customer premises equipment (CPE) essentially sees the provider's equipment as a Layer-2 device, such as an Ethernet VLAN switch or a frame relay switch. As Ethernet-based services expand, more corporations will find they simply can use an Ethernet switch to interconnect to their service providers. In some cases, a service provider may want the MPLS virtual circuits to begin at the CPE, which would require an MPLS-capable router on the premises.

Because MPLS Layer 2 VPNs are virtual circuit-based, they are as secure as other virtual circuit- or connection-oriented technologies, such as ATM. And because the Layer 2 traffic is carried transparently across the MPLS back-

Layer 3 MPLS VPN

Network-based VPNs create a virtual IP circuit within an IP network. The tunnels terminate at the service provider edge router.



bone, information in the original customer traffic — such as class of service markings and VLAN IDs — remains unchanged. Companies that need to transport non-IP traffic (such as legacy IPX or other protocols) may find Layer 2 VPNs the best solution. Layer 2 VPNs also may appeal to corporations that have private addressing schemes or prefer not to share their addressing information with service providers.

At this time, the Martini approach supports point-to-point connections only, although work on multipoint is proceeding. One IETF draft (Lasserre) already defines multipoint services for Ethernet and is supported by Riverstone and several other vendors. Work is also ongoing to automate some aspects of Layer 2 VPN provisioning, so that network operators only have to provision one rather than both ends of the connection. Several vendors indicated they are working to make Ethernet-based MPLS Layer 2 VPNs as easy to provision as VLANs.

Petrosky is an independent technology analyst in San Mateo, Calif. She can be reached at mary@mpetrosky.com.

How it works: Layer 2 VPNs

With Multi protocol Label Switching Layer 2 VPNs based on the Martini approach, a customer's Layer 2 traffic is encapsulated when it reaches the edge of the service provider network, mapped onto a label-switched path, and carried across a network.

This Layer 2 VPN technique takes advantage of MPLS label stacking, whereby more than one label is used to forward traffic across an MPLS infrastructure. Specifically, two labels are

used to support MPLS Layer 2 VPNs: One label represents a point-to-point virtual circuit, while a second label represents the tunnel across the network.

The current Martini drafts define encapsulations for Ethernet (port-based and virtual LANs [VLAN]), ATM (ATM Adaption Layer Type 5 and cell formats), Frame Relay, Point-to-Point Protocol and High level Data Link Control.

Other drafts are being developed that fine-tune support for specific traffic types. The Fischer draft (which vendors



such as Alcatel and Nortel support) provides an alternative encapsulation for ATM.

Once traffic is encapsulated, the ingress Label Switch Router (LSR) assigns it a virtual circuit label. This label identifies the VPN, VLAN or connection end point (equivalent to a Frame Relay Data Link Connection Identifier, for example); the egress LSR uses the virtual circuit label to determine how to process the frame. Control

protocols, including the MPLS Label Distribution Protocol and Border Gateway Protocol, are used to set up the emulated virtual circuits.

For its part, the tunnel label determines the path a packet takes through the network — that is, LSRs in the network core use the tunnel label for packet forwarding. Numerous emulated virtual circuits can be carried in a single tunnel, which aids in scalability.

Vendors are supporting a variety of MPLS protocols, including Label Distribution Protocol and Resource Reservation Protocol-Tunneling Extension, for tunnel setup.

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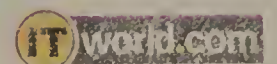
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A traffic cop for your wireless LANs

Bluesocket WG-1000 wireless gateway

■ BY TOM HENDERSON, NETWORK WORLD GLOBAL TEST ALLIANCE

Bluesocket has added a layer of security between wired and wireless resources via its WG-1000 gateway, which acts like a traffic cop for your wireless LAN. Much like a firewall protects an intranet from the Internet, the WG-1000 protects your secured wired network from attacks via the wireless network. Using IP Security, the gateway can give a higher level of protection than access points that use Extensible Authentication Protocol or Lightweight Extensible Authentication Protocol for authentication.

We recently tested the WG-1000 and found that it could successfully protect wireless resources, despite some early first-version rough edges such as weak documentation and complicated installation.

What it does

Based on a hardened Linux kernel in a 1U (1.75-inch) server frame, the WG-1000 sits between your wireless access points and the wired network. The WG-1000 is agnostic to the types of devices on both sides of the fence.

When the WG-1000 is interjected between a wireless client and protected resources, the client then must jump through hoops to "cross over" to the wired, secured side. Each device that goes through the gateway is confronted, which means that while Wired Equivalent Privacy (WEP) security in 802.11b can be cracked, the gateway still can stop the attack from reaching the wired network.

The confrontation takes one of several forms, as defined as a WG-1000 role. Through its Web interface, we created several types of roles. In turn, users fit within the roles, which are analogous to operating system group membership. As we authenticated as a user, our "role" permitted us various protocols (such as Web access and FTP) and gave us access to internal hosts.

Depending on the role, a user can trigger services ranging from none up to specific or all internal hosts and protocol permissions.

All roles are subject to reauthentication through Lightweight Directory Access Protocol or Windows NT/LAN Manager, and a VPN connection. The WG-1000 gateway

contains an integral IPSec VPN (with many choices of encryption method), or can proxy IPSec to another authenticator (Check Point and Windows 2000 Advanced Server) running IPSec.

Class of service is also provided, which lets you limit bandwidth per user, per role and/or per IP service. This can prevent bandwidth hogging, and also keeps users that are closer to access points from dominating their access.

VPN makes sense

The VPN connection makes the most sense in successfully securing wireless LAN managed resources. Hijacked sessions are possible if you don't force the use of a VPN. With a VPN, it becomes extremely difficult to use wireless protocol analyzers or Snort-like applications to hijack username/password combinations (such as Challenge Handshake Authentication Protocol and Password Authentication Protocol) and subject them to dictionary or XOR logic gate attempts that have cracked the WEP algorithm.

If VPNs (especially IPSec) are used in conjunction with the WG-1000, very high protection is possible (as long as IPSec is configured correctly).

This also means you won't need advanced access-point features, because the link between the client and the WG-1000 resources will protect wireless transmissions. It's still possible to easily get an association with a wireless gateway, but a drive-by client can't do anything with the session because the hijacking client can't send encrypted streams using the negotiated medium between the client and the gateway and its internal and protected-side authentication devices.

The WG-1000 includes an IPSec gateway and server, which was easier to configure than the Windows 2000 IPSec implementation. However, the gateway will also work with the Win 2000 Advanced Server IPSec implementation.

Net Results

WG-1000 wireless gateway

4.1
RATING

Company: Bluesocket, (866) 633-3358, www.bluesocket.com
Cost: \$6,000 as tested. **Pros:** Isolates and contains wireless LAN users; ultratough to hijack with IP Security; extensible and expandable; controls user bandwidth. **Cons:** Obtuse/difficult setup, weak documentation.

What's the score?

WG-1000

Security 40%	5
Features 30%	4
Management/Ease of use 10%	4
Installation 10%	3
Documentation 10%	2
TOTAL SCORE	4.1

Individual category scores are based on a scale of 1 to 5. **Percentages** are the weight given each category in determining the total score. ■ **Scoring Key:** 5: Exceptional showing in this category. Defines the standard of excellence. 4: Very good showing. Although there may be room for improvement, this product was much better than the average. 3: Average showing in this category. Product was neither especially good nor exceptionally bad. 2: Below average. Lacked some features or lower performance than other products or than expected. 1: Consistently subpar, or lacking features being reviewed.

Installation issues

The WG-1000 required a sophisticated initial setup. Fortunately, Bluesocket said additional units could become slaves to a master device, so settings could be automatically replicated. We did not test this because we only had one unit. Failover capability is also said to let a successor primary WG-1000 be established.

Deploying the gateway also requires that existing wiring from all access points (or other devices that you want to manage) be connected to a switch or hub that connects to the WG-1000, which has four ports (internal/external and up/down slave). The device can support as many as can be connected to one jack on the WG-1000 through a hub (or better, a switch that exclusively focuses wireless access points to the managed side of the WG-1000 bridge). One could support many hundreds of potential logons at one WG-1000, but wiring so as to send a line from each access point to a hub/switch connected exclusively to the bridge is mandatory and therefore causes more wiring problems.

In many campus environments or buildings, multiple WG-1000s are necessary, unless cabling exists to connect all the managed devices to the WG-1000. However you can reduce this expense through inexpensive, non-feature-filled access points because the advanced access-point features become essentially irrelevant if you use the WG-1000 for those advanced features.

The WG-1000 is sold through value-added resellers (VAR) and integrators which may support prices less than the \$6,000 retail price for quantities of units, and many organizations will require quantities if this type of deployment is decided on.

Some rough edges

We found the documentation occasionally skimpy and ambiguous, but we had to

read it because there are no help screens in Version 1.0 of the WG-1000 Web interface. Also, we couldn't find support or updates from Bluesocket's Web site to authenticate our version of the software.

We were dismayed that tech support is not 24-7, or available on weekends. Bluesocket is supported through VARs, which

are ostensibly required to support the product. However, we found the missing Web site support onerous.

The WG-1000 can be misconfigured and is not foolproof.

But correctly installed, it provides authentication and encryption support that replaces WEP security problems with VPN

and directory service authentication that can be tough to crack. So far, we don't know of a way to crack correctly configured IPSec in a way that could hijack a session or compromise authentication information or datastreams.

Although pricey, the WG-1000 is an agnostic way to contain and manage wire-

less LAN users while leveraging internal authentication mechanisms and VPN elements provided.

It suffers from Version 1.0 roughness, but does the job of isolating and managing wireless LAN clients well.

Henderson is principal researcher for ExtremeLabs. He can be contacted at henderson@extremelabs.com.

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How we did it

We installed the WG-1000 to our testing network, which included several Compaq Presario 700US notebooks, a Sony PCG ICX notebook, and an HP Pavilion desktop with various 802.11a and 802.11b cards from SMC, Agere/Orinoco, and Intel. We connected an Intel and Agere/Orinoco 802.11b access point, and an Intel and SMC 802.11a access point.

We then ran tests that included session hijacks on 802.11b cards, and man-in-the-middle crack attempts using WEPCrack and Air-Snort to dictionary attack or XOR attack streams in an attempt to hijack sessions.

We were successful in our ability to hijack session that didn't use VPNs, but used access point-based WEP encryption. However, with Point-to-Point Tunneling Protocol (V1.1) or IPSec (Bluesocket or Windows 2000-based with Windows 2000 certificate authority), we couldn't hijack sessions.

Added security authentication to LDAP (via OpenLDAP 1.3 on SuSE Linux 7.3 hosted on a Gateway-brand server) worked, as did NTLM authentication against Windows 2000 Advanced Server (SP2, hosted on a Compaq ProLiant 3000 server). Guest account access, when enabled on the WG-1000 also worked correctly when focused directly at our internal firewall/NAT/gateway, although such sessions could be hijacked because they used no VPN software, and therefore the sessions were unprotected from a WEPCrack attack.

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Global Knowledge

Peribit Networks' SR-50 Sequence Reducer

■ BY BARRY NANCE, NETWORK WORLD GLOBAL TEST ALLIANCE

Bandwidth for nothing and your T-3 for free.

Imagine telling your telephone company representative, who dutifully arrives at WAN upgrade time to sell you additional bandwidth, "No, thanks; I've found a way to make our T-1 lines carry more than 1.544M bit/sec. I'll stick with my existing T-1 lines until next year."

Data communication lines are expensive. Depending on which carrier you lease a T-1 line from and the distance it carries your data, each line typically costs from \$800 to several thousand dollars per month. The peaks and valleys of daily use mean you have to lease enough bandwidth for the busiest periods. When the busy-period traffic exceeds current bandwidth, you have to lease additional bandwidth. While frame relay and fractional T-1 provide incremental costs, lease rates for T-3 and higher speeds are rarely available in fine gradations.

To solve this, Cisco, Lucent and other vendors offer software compression options in their router operating systems and hardware compression modules. Shrinking the data before it traverses a WAN link and fluffing it up at its destination lets the link handle more traffic.

A relative newcomer, Peribit Networks claims its SR-50 Sequence Reducer takes compression to new heights. We tested a pair of SR-50s to determine the extent to which their compression could save bandwidth dollars for frame relay, fractional T-1, full T-1 and full T-3 WAN links. We evaluated the SR-50 not only for its ability to reduce utilization but also its user interface (for configuration and usage statistics), reliability, documentation and installation.

SR-50 Sequence Reducer is an excellent but somewhat pricey tool for helping WAN links carry more traffic. It typically shrank data by a factor of about four, was highly reliable, the user interface was a joy to operate, and installation was a 10-minute breeze.

Honey, I shrank the packets

SR-50's compression ratio averaged 4.6-to-1 across all our tests (see How we did it, right), varying from 2.7-to-1 to 9.4-to-1 for several mixtures of traffic types. We observed the least compression when half the traffic consisted of accessing already-compressed ZIP files on a file server, and we observed the greatest compression when half the traffic consisted of e-mail messages that were 4K to 8K bytes. Traffic consisting predominantly of database transactions experienced a compression ratio of 6.6-to-1. Web page-

How we did it

Our testing network consisted of two Fast Ethernet subnet domains connected by Cisco and Lucent routers and back-to-back Visual Networks DSU/CSUs. The frame relay link had a committed information rate of 256K bit/sec and could burst up to 384K bit/sec. An Agilent Advisor protocol analyzer generated packets and decoded and displayed network traffic.

intensive traffic compressed at ratios from 3.5-to-1 for pages containing large numbers of already-compressed graphic images, to 8-to-1 for pages containing mostly text.

SR-50 has two RJ-45 ports, a serial port and a Universal Serial Bus (USB) port. Connecting an ASCII terminal or PC-based terminal emulator via the serial or USB port lets you use SR-50's command-line interface. One RJ-45 port connects to a switch or hub, and the other RJ-45 port connects to the router. In other words, you insert SR-50 into a connection between a router and switch or hub. Because the unit compresses all traffic flowing through it, SR-50 works best in a switched environment. Connecting the unit to a hub and router (as opposed to a switch and router) didn't slow SR-50 down in our tests. However, because hub-connected devices receive all traffic, we suspect that if SR-50 were ever to bog down, it would happen when connected to a hub.

When we simulated hardware failures by powering down SR-50, it went into bypass mode to make sure the traffic kept flowing. In general, the unit is well designed and highly reliable.

Besides the command-line interface, SR-50 sports a Web-based interface for configuring the unit and viewing compression statistics. Installing the unit takes only a few steps, and the documentation is clear, comprehensive, well-indexed and rife with screen illustrations, but it's only available online. SR-50's compression technology is better than Cisco's (4.6-to-1 vs. only 2.9-to-1), but, as an example, Cisco VPN Acceleration Module costs only \$5,000. Also, because compression depends on repeated data patterns to work, and encryption randomizes data destroying the data patterns, attempting to compress (via Peribit or Cisco) encrypted data typically results in larger, not smaller, packets.

Conclusion

If you have a WAN link you're planning to upgrade because its usage is increasing, consider saving money by using compression to prolong the life span of the link. While we observed a compression ratio of 4.6-to-1 with SR-50, your mileage may vary. To analyze your own environment and the link's growth rate, determine its current utilization, note the cost of the link and the planned upgrade, and factor in a conservative compression ratio of 2-to-1. If the calculations show you can save money by buying a pair of SR-50s (don't forget to also do the math for the Cisco option) to stave off the planned upgrade, you should think seriously about compression.

Nance, a software developer and consultant for 29 years, is the author of *Introduction to Networking*, 4th Edition and *Client/Server LAN Programming*. He can be reached at barryn@erols.com.

Net Results

SR-50 Sequence Reducer

WORLD CLASS WINNER

4.5
RATING

Company: Peribit Networks, (866) 737-4248, www.peribit.com
Cost: Starts at \$15,000 each. **Pros:** Excellent traffic compression (better than Cisco's), highly reliable, easy installation and configuration. **Cons:** More expensive than the equivalent Cisco compression feature.

What's the score?

SR-50 Sequence Reducer

Bandwidth savings 40%	4
Reliability 30%	5
Ease of use 10%	5
Installation 10%	5
Documentation 10%	4
TOTAL SCORE	4.5

Individual category scores are based on a scale of 1 to 5. Percentages are the weight given each category in determining the total score. ■ **Scoring Key:** 5: Exceptional showing in this category. Defines the standard of excellence. 4: Very good showing. Although there may be room for improvement, this product was much better than the average. 3: Average showing in this category. Product was neither especially good nor exceptionally bad. 2: Below average. Lacked some features or lower performance than other products or than expected. 1: Consistently subpar, or lacking features being reviewed.

Global Test Alliance

■ Nance is also a member of the Network World Global Test Alliance, a consortium of the premier reviewers in the network industry, each bringing to bear years of practical experience on every review. For more Test Alliance information, including what it takes to become a member, go to www.nwfusion.com/alliance.

Management

Strategies

■ CAREER DEVELOPMENT
■ PROJECT MANAGEMENT
■ BUSINESS JUSTIFICATION

IT malpractice

When products or consultants fail to do the job, companies are calling in the lawyers.

■ BY ANN BEDNARZ

Imagine a retailer plans to revamp its Web site in time for the holiday shopping season using new software and a systems integrator. But it's February by the time the new site is operational. The retailer limped through December with its old site, sales are down, customer satisfaction is at an all-time low, and the Federal Trade Commission is investigating the company's problems fulfilling online orders. Was it simply a bad season or dereliction of duty?

Increasingly, IT customers are crying malpractice and railing against slipped implementation schedules, compounded consulting fees and disappointing product performance. No one expects a software rollout to be perfect, but when the process seems to yield more flaws than fixes, some clients turn to litigation.

One of the most infamous examples is FoxMeyer, which says its enterprise resource planning rollout was botched so badly that it was forced into bankruptcy. The drug distributor filed lawsuits in 1998 against software company SAP and Andersen Consulting (now Accenture). The case is still unresolved as trial dates — scheduled in federal and Texas state courts for September and June of this year, respectively — draw close. At stake is a combined \$1 billion in damages that FoxMeyer seeks from the defendants.

The compensation sought by FoxMeyer isn't too unusual. "You'll see some pretty crazy numbers," says Tim Ehrhart, assistant vice president and leader of the errors and omissions (E&O) practice at Chubb Group of Insurance Companies. E&O for IT vendors is the equivalent of medical malpractice insurance for doctors. A vendor that buys E&O insurance and is subsequently sued can count on its insurer to play a role in settlement negotiations and, if the lawsuit progresses that far, eventually offset or absorb the vendor's liability.

During the past five years, Chubb has seen a nearly tenfold increase in the number of \$1 million-plus claims, Ehrhart says. "The stakes get high because today we're so dependent on technology," Ehrhart says. He

Litigation nation

Because disappointing performance, delivery delays and product defects are among the reasons companies resort to litigation ...

Causes for litigation:

Functionality and/or performance of delivered product didn't live up to claims of maker:

67%

Promised delivery date slipped several times:

56%

Defects in vendor's product make the product unusable:

45%

SOURCE: CUTTER CONSORTIUM

cites one U.K. company that is seeking \$200 million in consequential damages stemming from an IT contract originally worth \$80 million.

How much of such claims typically gets paid is unknown, except perhaps to the insurance companies. Most IT disputes are settled out of court, so there are few legal precedents on which to gauge plaintiffs' or defendants' success.

One very public exception is a lawsuit filed by the Mississippi Department of Information Technology Services (ITS) against American Management Systems (AMS). The original \$11 million contract called for AMS to build an automated tax system to collect 36 taxes for the state's Tax

Commission during a 40-month period. However, "not a single tax was implemented during the 64-month term of the contract," according to an ITS statement.

Settlement attempts failed, the case made it to trial, and a jury in August 2000 awarded the state of Mississippi \$475 million in actual and punitive damages. Post-verdict negotiations between the parties reduced the settlement to \$185 million over several years.

While there have been only a handful of headline-grabbing cases, disputes between

business needs.

Key to aligning expectations, therefore, is the contract phase. In his work at Gadsby Hannah,

Zucker helps companies prepare their requests for proposal, evaluate vendors and draft contracts that include conflict- and change-management provisions.

Zucker recommends a contract include a mechanism for meeting on a regular basis — ideally monthly — to review contract status, performance, problems and successes. Not only do you build up personal relationships, but you also discover along the way the little things that need discussing, he says. "If you tweak those along the way you avoid big lurches later on," Zucker says.

What's more, a company needs to plan for how it will end a contractual relationship with a vendor, whether because a contract expires or is terminated, Zucker says. And that requires cooperation upfront from the vendor. If a vendor isn't willing to discuss exit strategies, "that's the wrong vendor," Zucker says.

Here's some other negotiating advice that might help you avoid a legal conflict — or protect you if one becomes inevitable.

● Document, document, document.

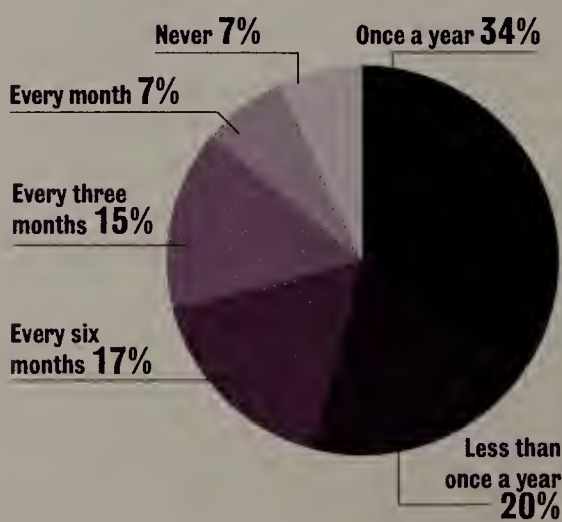
Put in writing any requests for changes to the IT project scope. Document any problems during the project. The more supportive documentation there is for a legal battle, the better.

● Consider requiring malpractice insurance. Some companies will work only with vendors that provide proof of not only general liability insurance but also professional liability coverage, Ehrhart says.

● Address damages in the contract. Vendors will likely want to impose liability limitations — some will go as far as to push provisions that absolve them from all responsibility for consequential damages. Clearly, that's a bad idea for clients, Ehrhart says. ■

... experts recommend to keep in touch with vendors. Frequent meetings can keep problems from escalating, but few companies heed that advice.

Frequency with which IT contracts are reviewed:



IT vendors and customers are more common than you might think. Cutter Consortium found an eye-popping 78% of survey respondents said their IT organizations have been involved in a dispute that resulted in litigation (see graphic).

A big part of the problem is mismatched expectations, says William Zucker, a senior analyst at Cutter and partner at law firm Gadsby Hannah, where he heads the firm's litigation and technology practices. The vendor goes by defined contractual obligations, whereas the client looks to solve business issues, Zucker says. Standard business terms and contractual provisions may be inadequate for an arrangement between a client and supplier that is to fulfill critical



More online!

Read about PricewaterhouseCoopers' study of 120 IT litigation cases that occurred over a 25-year period.

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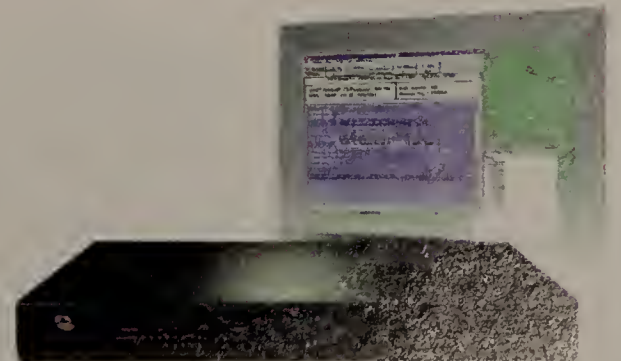
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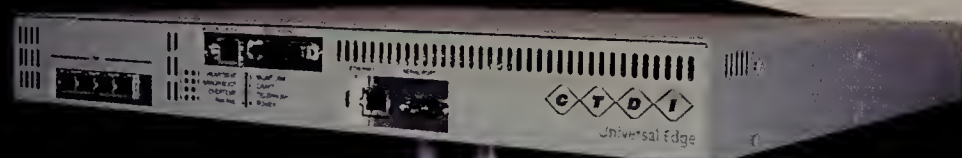
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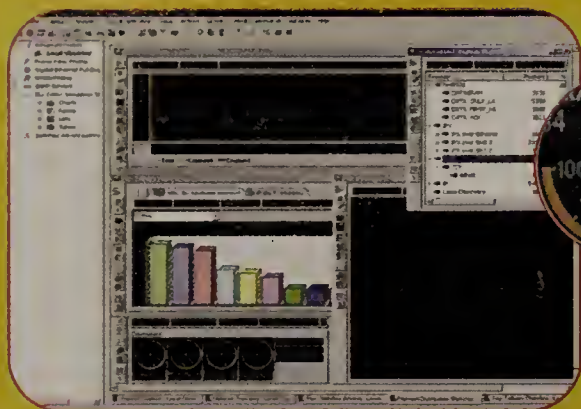
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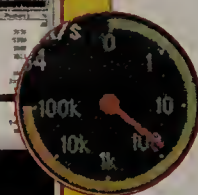
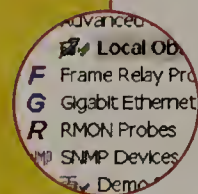
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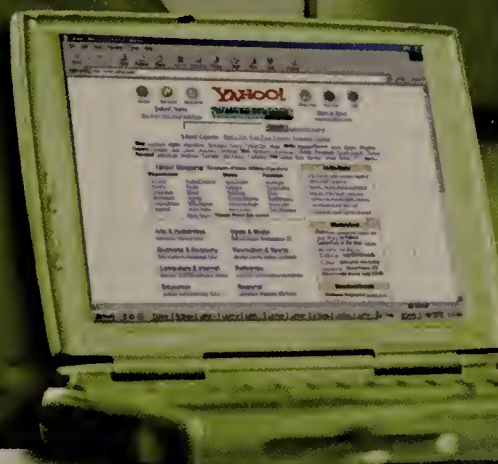
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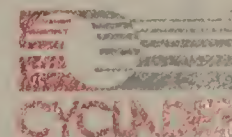
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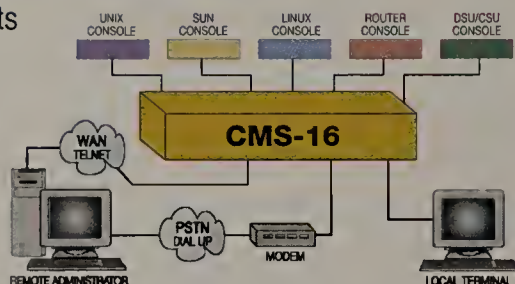
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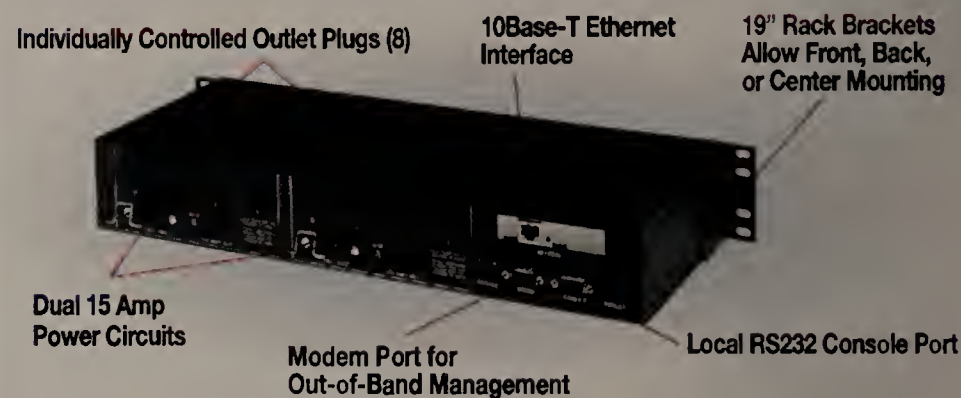


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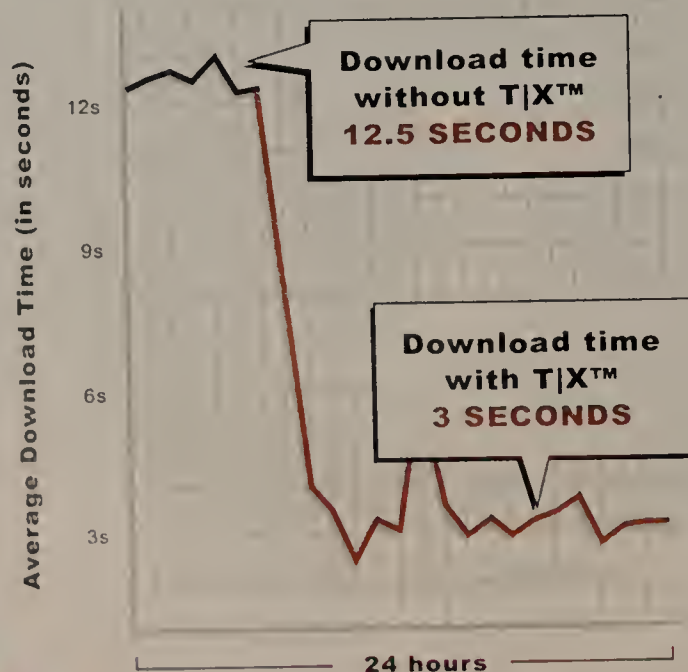
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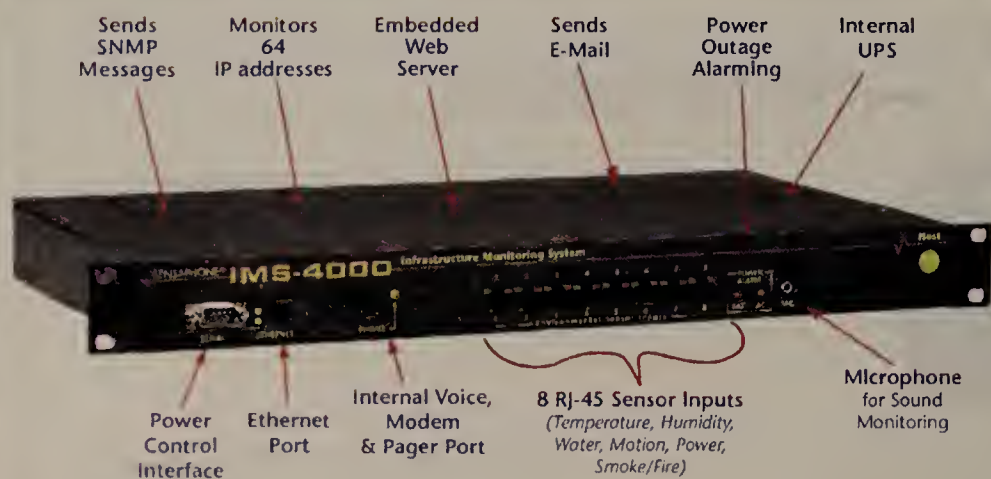
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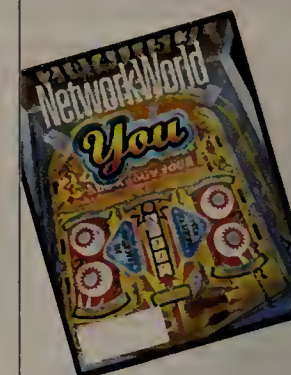
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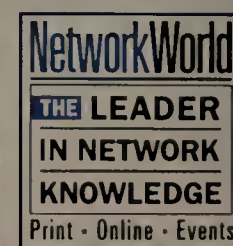
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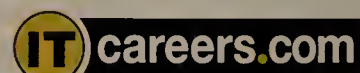
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IBM makes moves in privacy, server areas

Company releases free Java tool for enforcing privacy.

■ BY ELLEN MESSMER

AUSTIN, TEXAS — IBM this week is making available a free Java-based tool for defining privacy policies for data and enforcing them in Web-based applications.

The stand-alone tool, called IBM Tivoli Privacy Wizard, is designed to ensure that data collected through Web applications is earmarked via XML tags to prevent violations of privacy policies. For instance, there may be rules against using certain personal data for marketing purposes if collected for e-com-

merce or human resources.

"It can be used by IT administrators to manage the life cycle of the privacy policy," says Arvind Krishna, an IBM Tivoli Systems vice president. "It's a way to automate the privacy policy."

Privacy Wizard can work with privacy policies already defined by a corporation or the standards-based privacy policy developed at the World Wide Web Consortium called Platform for Privacy Preferences.

The tool can be downloaded from www.nwfusion.com, Doc Finder: 8848. IBM Tivoli ultimately might put a price tag on the

tool, though for now it hopes organizations will download it and experiment with it.

In related news, IBM says Ernst & Young has decided to join the IBM Privacy Management Council. This organization consists of companies in retail, healthcare, technology and other industries that meet to discuss the status of government and corporate privacy regulations around the world. Members include Deloitte & Touche, Fidelity Investments, Marriott International, Novant Health, T. Rowe Price and the U.S. Department of Commerce. ■

Midrange box set to roll.

■ BY DENI CONNOR

IBM is expected to announce today a new midrange server that has mainframe capabilities such as partitioning and virtual server management.

Called the p670, the Unix server is a smaller version of IBM's powerful p690 'Regatta' server. The p670 uses the Power4 microprocessor and can be divided into more than 12 virtual servers and 16 partitions, letting users consolidate smaller systems, share operating systems and perform multiple, concurrent tasks.

The p670, which has four to 16

processors, can run several applications in each partition and different operating systems on each processor.

The server uses some of IBM's self-healing, self-managing Project Eliza technology, including the ability to continue operations through major failures and system errors. The idea behind Eliza is to help users by automating many of the tasks customers now spend time doing manually.

The p670 runs AIX 5L and is 64-bit Linux-ready. It starts at \$178,270 and is expected to be available this month.

IBM: www.ibm.com

VON

continued from page 1

every desktop.

The idea of mixing an IP PBX with existing digital handsets is appealing to Steve Sharrock, IS manager at Portage Path Behavioral Health in Akron, Ohio. Sharrock recently installed 3Com's NBX in two of the mental health clinic's five offices and is looking to eventually replace all the company's ADIX PBX systems with the 3Com gear.

"If I could replace an old [phone system] and not have to replace the phones, that would be great," Sharrock says. "The programming is a nightmare on any key system. One of the things I like about NBX is the ability to change the configuration easily."

Because his company is non-profit, Sharrock is always looking for ways to reuse or integrate existing equipment with new gear.

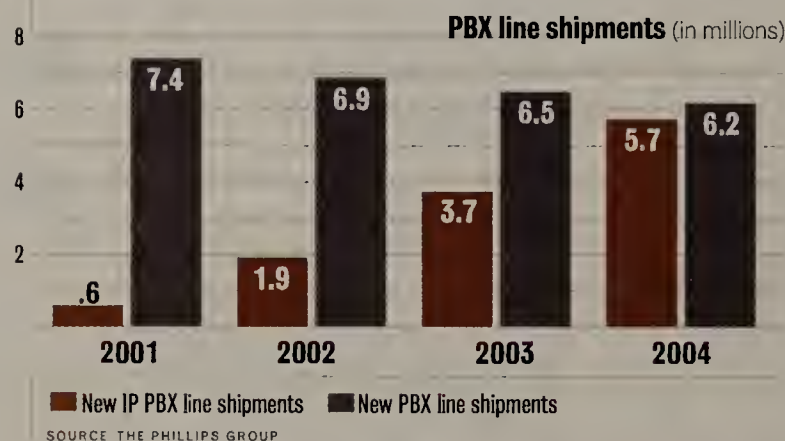
"Recouping my investment in old phones and having all the graphical management of the NBX would be pretty slick," he says.

Support for call centers

For large call centers, Aspect Communications will launch IP Contact Center 1.1 at VON. Aspect has added support for H.323, Session Initiation Protocol (SIP) and media gateway control protocol phones to IP Contact Center. Also added are unified voice and e-mail messaging support for call center agents and e-mail integration with Lotus

Convergence gains

Analysts predict IP PBX line shipments will explode over the next few years, significantly narrowing the gap vs. shipments of traditional PBX lines.



Domino servers.

Aspect's earlier IP Contact Center release supported only a softphone application with a PC running Microsoft NetMeeting or digital desktop phones tied to the IP Contact Center through a circuit-switched PBX trunk. The new software supports standards-based IP phones from vendors such as Cisco and Polycom.

Voice messaging on the IP Contact Center will let customers leave a voice mail for a customer call agent. The voice mails are converted to digital audio files, and can be routed to the call agent's Lotus Notes inbox or Microsoft Outlook inbox. (IP Contact Center previously supported only Outlook.) The software will cost between \$2,000 and \$6,000 per agent, and will be available in May.

With so many options for IP telephony now available, businesses are starting to accept

convergence as the next step in business phone systems, industry watchers say. Last year, the average IP telephony rollout increased to 68 IP handsets per install — up from 42 the year before, according to In-State/MDR. IP PBX line shipments are expected to rise more than 700% by 2004, while traditional PBX line shipments will decrease around 20% over the same time period (see graphic, above).

Traditionally, VON has focused on packet telephony in carrier networks, but this week's show will feature many enterprise twists. Included will be the day-long VON Enterprise Forum; a three-day enterprise VoIP session track and the *Network World* VoIP Showdown, in which representatives from Alcatel, Avaya, Nortel and Shoreline will participate in a presidential-style debate about enterprise VoIP hosted by John Dix, *Network World* editor in chief.

Other vendors making announcements at VON include:

- Mitel, which will announce two IP PBXs for small and midsize branch offices. The Mitel Networks 3340 Branch Office Solution is an IP call server that can be used to link hundreds of users in several offices over IP, with a common dial plan and toll-free long-distance calling over a WAN connection.

- The 3050 Integrated Communications Platform is geared for offices with 10 users and combines a Linux firewall, VPN encryption, a SIP-based IP PBX and an 802.11b wireless access point for LAN connections. Both products work with Mitel's 5055 SIP phone.

- Hughes Software Systems

will release its HSS SIP Server, which can control applications such as SIP-based voice calls and conferences among such SIP devices as IP phones and PCs running Microsoft's SIP-based Windows Messenger, included in Windows XP.

- GoBeam will introduce Dashboard 2.0, a browser-based messaging client that will let remote or home-office users access voice mail and schedule conference calls over the Web.

- Siemens will demonstrate SIP and H.323 interoperability with its OptiPoint 400 IP phones. ■



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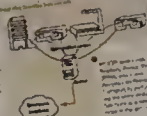
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BackSpin Mark Gibbs



Practical politics for IT players

"A politician is an animal which can sit on a fence and yet keep both ears to the ground."

—H. L. Mencken

Last week I concluded: "As IT becomes increasingly important in business, IT people have to become more politically adept. The sooner we start playing politics the sooner we will get the power we need to effectively do the job we love."

The essence of politics is this: If you want to be a long-term player, choose your battles carefully. Don't fight a battle just because you can; fight it because it is a tactic that supports your overall strategy.

But many people are just ready for a fight. And when you are reflexively rebellious, you wind up fighting every battle. In the IT world, there are many people who adopt rebellious poses.

Just look at most programming, systems engineering and support groups — you will see more anti-social habits and poor grooming than can be accounted for by simple ignorance and sloth. These people often display their defiance of "the system" in every way that doesn't get them fired.

At the heart of this posturing is an unwillingness to "play the game" that is rooted in the idea that the magic IT does with computers somehow is better than whatever other groups in the organization do.

While we could get away with this position when we were the hot Young Turks, that time has passed. We're now mainstream players and we need to grow up and play politics. For example, you might have put Web servers in place for a supplier extranet but have not yet provided an interface from the extranet into the order processing system. You get points for the extranet, but the missing pieces can lose you lots of points. That is, unless you get political.

Getting political is about communicating the issues — making the company aware that you have done everything possible and that 1) more time is needed to ensure a secure and reliable solution; or 2) more money is needed. Or whatever reasons you have. The only politically right thing to do is to step up, own the problem and offer to solve it.

Similarly, the fact that these Web servers function so well because of the bitchin' network that underlies them is not something that most people in the organization would know anything about. This underscores the issue of where the business knows it is being supported and where it doesn't have a clue.

It would be wise to make sure everyone knows as much as you can tell them about the benefits of your infrastructure. And don't give them detail about the routers and virtual LANs and so on, give 'em the big picture about how much business is done on the network, how much the network has increased revenue, how much customers love it and — this is key — how much better it is than what the competition has.

Playing politics in a corporate setting is about establishing your value and position — not about staying separate from the organization and just "doing your job."

While "doing your job" might sound appropriate and like something that should be rewarded, the facts of life are that the rest of the company has to appreciate what you do. And it is no good just banging your drum to try to get the company to acknowledge your role — you have to finesse your message into the mix, make your case and prove it. It is all about making relationships that provide the scaffolding that support and justify your existence.

The need for IT to play politics is something that cannot be ignored. At least, if you want to be a player.

Game plans to nwcolumn@gibbs.com.



'NetBuzz News, insights, opinions and oddities

Paul McNamara

Do-it-yourself DSL is no pipe dream

There seems to be a better chance of the Macy's Thanksgiving Day Parade coming to my neighborhood this year than us getting DSL service from Verizon. . . . And I live in Massachusetts, not New York City.

Carl Oppedahl has long felt the same way about his Colorado neighborhood and Qwest. Here's the

difference between us, though: Oppedahl isn't just whining about his dearth of DSL; he's going out and rolling his own.

An attorney by trade, Oppedahl is spearheading the Ruby Ranch Internet Cooperative Association, whose mission since being founded last year has been to provide DSL service to the 40 homes in the members' subdivision in Summit County, Colo.

This has turned out to be easier said than done.

Assembling the necessary equipment wasn't hard — the group's DSLAM is housed in a barn — but getting Qwest to cooperate proved to be the most daunting task. (You can read everything you'd ever want to know about such a project at www.rric.net.)

"By far the biggest challenge faced by the Coop — a challenge that dwarfed any of the technical and financial challenges — was gaining access to subloops from Qwest under the Telecommunications Act of 1996," reads the homepage introduction. "The course of negotiations was such that the Coop found it necessary to file an informal complaint with the Federal Communications Commission and subsequently found it necessary to pursue arbitration before the Colorado Public Service Commission."

The Ruby Ranchers won some and lost some before that commission, but the bottom line is that they are now within a fistful of paperwork from bringing high-speed 'Net access to homes that would otherwise go on wanting.

It took us some 10 months to go through the negotiations, which means one

needs to start with the phone company maybe a year in advance of when you really want to launch service," Oppedahl says. "Others might have better luck than us with their phone company, in which case maybe they would not face a yearlong delay."

By better luck he means less grief.

"We surely hope that others will consider setting up their own DSL systems," Oppedahl adds.

Personally, I'll wait for the parade.

Can cookies be far behind?

A colleague's friend in Vladivostok offers this report on how capitalistic principles on worker protection — and perks — are evolving in Russia:

"Section 173 of the recently enacted Russian Labor Code specifies that 'any employer who has an employee work at a computer for four continuous hours shall provide that employee with 0.5 liter of milk,'" writes the friend.

Seriously? . . . Well, yes and no.

"It is law. . . . Now will employers obey this? Ha! They don't obey *anything*. But then, neither do the employees!"

Perhaps the compliance rate would be higher if the law allowed for leeway regarding the choice of beverage.

There's no such thing as bad news

Sometimes we in the news business have to take a step back and tip our hats to the creativity of our friends in public relations. Witness this opening sentence in a press release from Yipes:

"Yipes Communications, the defining provider of instantly scalable Ethernet services, today announced that it is seeking to restructure its business to enhance future growth opportunities."

Who'd have thought that this was another way to say the company filed for bankruptcy?

No need to mince words if you have something to say about any of this. The address is buzz@nwu.com.



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